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Montana
Environmental
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Montana's
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Montana's Revised Water Quality Monitoring, Assessment, and Improvement Program

(HB 546 and TMDLs in Practice)

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An EQC Oversight Report to the Montana Legislature

Environmental Quality Council
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CHAPTER 1. INTRODUCTION AND SUMMARY OF FINDINGS AND RECOMMENDATIONS

INTRODUCTION

The purpose of this report is two-fold. First, it is intended to provide general background information on Montana's revised (pursuant to passage of House Bill 546 in 1997) approach to water quality monitoring, assessment, and improvement. It is also intended to communicate to the Legislature the results of the Environmental Quality Council's (EQC) oversight of these program revisions, including specific policy considerations that may arise during the 1999 Legislative Session, next Interim, or further in the future.

In preparing to conduct legislative oversight of the Montana Department of Environmental Quality (DEQ) program discussed herein, EQC Co-Chairs, the bill sponsor, and EQC staff met with the DEQ director and staff in August of 1997 to discuss what opportunities the planned oversight might provide for the DEQ. Those discussions identified 6 aspects of program implementation that the DEQ felt the EQC could assist them with over the 1997-98 Interim, one aspect being . . .

- assisting with public information and serving as a liaison with local governments (especially concerning cross-jurisdictional issues).

For this reason (and because of the Council's general mandate to communicate with the public and share information with others), EQC staff coordinated with DEQ staff to create a product whereby chapters 1-4 (plus some appendices) of this report could be republished as a "primer" to the program.

For ease in using this document, subsequent chapters and their content are described below:

Chapter 2 -- This chapter provides an overview of HB 546, what it changed, and a hypothetical example of how its implementation might occur "on-the-ground".

Chapter 3 -- This chapter provides answers to water quality improvement strategy-related questions that have been frequently asked of both DEQ staff, as well as Montana University system Water Center staff (who maintain a related Web Site on the Internet).

Chapter 4 -- Four examples of water quality improvement efforts are described that cover four different areas of Montana, as well as four different types of water resources, issues, and scales and stages of assessment and improvement efforts.

Chapter 5 -- The chapter includes: a description of the oversight process; the Council's general findings from its oversight; descriptions of specific policy considerations deemed of likely interest to the 1999 Legislature, agency staff, the interested general public, and future Legislators and members of the EQC; and Council recommendations emanating from the oversight activities.

Appendices -- These include some of the most relevant technical references for someone wishing a basic introduction to the DEQ's revised water quality monitoring, assessment, and improvement program, as well as information supplemental to EQC oversight of HB 546 implementation.

Those wishing more detail on the information provided here may contact DEQ or EQC staff. Again, the information here is intended (1) as a primer, and (2) as a means for a legislative committee (the EQC) to communicate its oversight findings to the full Legislature. Further information on the EQC's oversight of HB 546 implementation is provided in Chapter 5. Suggestions on how to make this document more helpful to the lay audience are encouraged and welcome.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

General Subcommittee conclusions and recommendations from their oversight of HB 546 implementation are interspersed through Chapter 5 of this report and are summarized in **Appendix A**. They are not summarized here because they incorporate a variety of technical terms that readers may not be familiar with until proceeding further in their reading of the report. The headings in Appendix A correspond to the topics listed for Chapter 5 in the table of contents.

CHAPTER 2. WHAT?! NOT ANOTHER ACRONYM?!

THE LEGISLATURE'S 1997 DIRECTIVE TO THE DEQ

During the 1997 Legislative Session, HB 546 added yet another acronym to the Capitol parlance -- "TMDL," or "Total Maximum Daily Load." One of the major pieces of natural resource-related legislation passed by the 55th Legislature, HB 546 provided more explicit direction to Montana's Department of Environmental Quality (DEQ) on how to implement a major directive of the federal Clean Water Act -- essentially, determine which Montana streams and lakes have water quality problems and take steps to clean them up. TMDLs are tools states can use to address these problems and they will likely be the topic of water quality discussions in Montana for years to come. But first, some background...

TMDLs and the federal Clean Water Act (CWA)

As with many states' environmental laws, Montana water quality policy is heavily influenced by federal law and regulations. For example, before a state can issue permits for pollutant discharges into its rivers, it must develop a program that meets federal Environmental Protection Agency (EPA) requirements. The state is then delegated the responsibility for issuing pollutant discharge permits; if a program is not delegated, the EPA retains the responsibility to issue the permits.

A primary purpose of the federal Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Though it "recognizes, preserves, and protects" states' responsibilities in water quality protection and resource planning and development, it assigns overall administration of the Act to the EPA.

The Act requires states to adopt water quality standards (WQSs) for the protection of surface water quality. Water quality standards are set based upon the conditions necessary to support the beneficial uses assigned to a water body -- those uses the water should support (see **Appendix B**). For example, the beneficial uses assigned to the Bighorn River (above Hardin) are: drinking and food processing (after conventional water treatment); water contact recreation; support of cold-water fish species, other aquatic life, waterfowl, and furbearers; and agriculture and industry. The water quality standards set to support these uses address changes from natural conditions for such parameters as coliform, dissolved oxygen, pH, turbidity (lack of clarity), temperature, color, toxics, and other detrimental or harmful substances.

Changes in water quality from natural conditions typically emanate from either point source (PS) discharges or nonpoint source (NPS) discharges. Point source discharges are from an identifiable entry

point (e.g., sewage treatment plant pipe, canal, etc.); nonpoint sources are those that carry pollutants into waters from broad expanses of land (i.e., not a specific point). Inputs from agricultural operations and timber harvest activities are often non-point sources of water pollution. Point source discharges are controlled through the state's discharge permit program. NPS discharges are addressed through encouraging voluntary use of certain practices determined to reduce water quality problems. These are termed "best management practices," or BMPs. Examples of forestry BMPs include: crossing streams at right angles, sizing permanent culverts larger than 15 inches in diameter, and avoiding skidding over drainage areas.

Section 303(d) of the federal Clean Water Act and related regulations require states to assess the condition of the state's waters to determine if their quality is impaired (does not fully meet standards) or threatened (is likely to violate standards in the near future). The result of this review is often called the 303(d) list, which must be submitted to the EPA every other year. Section 303(d) also requires states to prioritize and target water bodies on their list for TMDL development, and to develop TMDLs for impaired and threatened waters.

In theory, a TMDL is first a determination of which land use is contributing what to water quality conditions in an impaired (or threatened) segment, both point sources and nonpoint sources. The calculations must also define and account for natural background water quality conditions. Once those calculations are made, all contributors are assigned an allowable share of the pollutant load that they can discharge. The assignments must incorporate necessary reductions in the parameters causing the segment to be classified as impaired. Some dischargers may wish to trade portions of their allocations with other dischargers, which is allowed. **The total maximum daily load (TMDL), then, is the total loading of certain pollutants that the water body can accommodate without exceeding water quality standards -- it's the total above natural conditions that (theoretically) gets divvied up among dischargers to an impaired or threatened water body.**

A hypothetical (and extremely simplified!) example may be helpful . . .

> Acronym Creek, located near the pastoral (but growing) community of Abbreviation, Montana, has been assigned the same beneficial uses as the Bighorn (see preceding text), and water quality standards have been set accordingly. Land uses affecting the water quality of Acronym Creek include cattle ranching, residential subdivisions on septic systems, a small industrial plant, and a small waste treatment plant. The town of Abbreviation draws its drinking water from Acronym Creek.
>
> According to Montana's 303(d) list, water quality in Acronym Creek is impaired due to excess temperature, and threatened due to increasing turbidity. Contributors to increased temperature have been determined to be a combination of riverfront residents removing streamside vegetation to improve views, the industrial plant's discharge of its cooling process waters, and water withdrawals. In some locations, summertime water temperatures have exceeded 75°F, which can be lethal to trout. Turbidity is beginning to affect the ability of fish to feed. High temperatures are contributing to increased algal and weed growth, requiring the town's one maintenance worker to continually travel to the water plant to clean weeds and algae from the intake. (More on Acronym Creek later . . .)

The Montana Situation in 1996 -- Setting the Stage for HB 546

So, where do we stand in Montana with regard to the mandate of Section 303(d) of the federal Clean

Water Act -- to assess and address impaired and threatened waters? Frankly, somewhat better on the "assessing" than the "addressing". Montana's 1996 303(d) list submitted to the EPA included about 900 water bodies that had been determined to be impaired or threatened. (See **Appendix C** for excerpts from Montana's 1998 303(d) list.)

Despite the length of the list, as of 1996, only one comprehensive TMDL had been completed in Montana (though several were in progress). One complication was that the DEQ was uncertain whether they had sufficient state statutory authority to aggressively pursue TMDL development in Montana, and even if they did, they lacked the resources to do so. In 1992, seven water bodies had been targeted for TMDL development by 1994. In 1994, all seven were still on the targeted list.

And these issues were not unique to Montana. As of 1996, the EPA was being (or had been) sued in 16 different states based on allegations they had shirked their responsibilities under 303(d) to ensure states moved forward in water quality assessment and TMDL development. The EPA was scrambling to defend itself, settle lawsuits, and make some moves nationally to provide greater assistance to states.

At the same time, long-time concerns were again voiced in Montana over whether so many Montana water bodies really deserved to be called impaired or threatened -- What criteria were used to make that decision? Were there real "data" to support the conclusion or was it based on "windshield surveys"? Was the state on shaky ground legally if they continued to issue discharge permits on impaired streams when TMDLs hadn't yet been developed? Big questions.

The Montana DEQ had achieved more than many other states involved in TMDL-related lawsuits. After all, Montana had made comprehensive efforts on the assessment end. Other states hadn't gotten that far. And the DEQ had been making efforts at water quality improvement through means other than TMDL development for years.

So what happened? In early fall of 1996, the Western Environmental Trade Association (WETA) sponsored a forum on these issues, and produced a related position paper on TMDL development in Montana. The paper (together with a briefing paper and alternatives analysis prepared by the DEQ) provided a starting point for a DEQ-sponsored collaborative effort to draft a legislative proposal to address: issues surrounding the 303(d) list and what went on it, TMDL development, and all the decisions surrounding the priorities, method, and coordination involved in implementing this mandate of the Clean Water Act. Many hoped that successful TMDL legislation would illustrate that Montana was committed to moving forward on TMDL development. If so, maybe a lawsuit wouldn't be filed, or, if one were, the court might resolve a suit in a manner that retained state autonomy to develop TMDLs.

But on December 2, 1996, what some might have considered inevitable happened. The EPA received a notification of intent to sue over lack of TMDL progress in Montana. The EPA was now in a similar defensive position in Montana, as it had been in Ohio, Kansas, Washington, New York, Georgia, Alaska, Minnesota, Idaho, and other states.

The increased potential for a lawsuit added urgency to efforts to address TMDL issues in Montana -- if a suit were successful, the EPA might be forced by the court to develop TMDLs for Montana; the state would lose authority and the EPA had paltry resources to dedicate to such a mandate -- the result could be quite the top-down, heavily regulatory, federal solution to water quality issues in Montana. Not very desirable from a state autonomy point of view. ..... the lawsuit was filed against EPA on February 28th.

The DEQ collaborative effort succeeded in airing many of the concerns of the spectrum of parties that participated; many compromises were made and issues addressed, but there was not consensus on the result before it had to move into the bill drafting stage at the Legislature in late January. Several revisions were incorporated during the drafting stage, and a few amendments during the hearing process, but the bill proceeded through the passage and approval process only moderately changed from its introduced version. Other bills authorized approximately $2 million in former and new funding, as well as 9 new positions (FTEs), to dedicate to the efforts covered in HB 546.

HB 546 -- More than an Acronym...

HB 546 was requested by Senator Lorents Grosfield and sponsored by Representative Bill Tash. What did it do? In general:

- it defined the terms necessary to move forward in TMDL development and provided stronger legal authority to do so;
- it required the state to monitor state waters to accurately assess their quality and to develop TMDLs for impaired and threatened waters;
- it set procedures on how to determine whether sufficient credible data were used in developing the 303(d) list, required that waters lacking such data be removed from the list by October 1999, and allowed persons to petition the DEQ to add or remove a water body from the list;
- it required the DEQ to consult with local watershed advisory groups and conservation districts in developing and revising the list and in developing TMDLs, set up a statewide advisory group to advise on prioritization, and set out criteria to be used in determining priorities for TMDL development;
- it specified that TMDL development must include quantified load allocations for point source discharges and development of voluntary Best Management Practices (BMPs) for nonpoint sources;
- it required monitoring of the success of TMDL strategies and reevaluation of the approach if water quality standards are not achieved on waters with TMDLs within 5 years;
- it provided a 1-year timeframe to determine how to develop necessary TMDLs, and a 10-year timeframe to do it.

Quite a charge. But, also a strong message that the Legislature was serious about addressing the TMDL issue in Montana. (See **Appendix D** for HB 546 as it was encoded in statute.)

So how might our hypothetical Acronym Creek be affected by HB 546 implementation? Though extremely simplified (and very optimistic!), one scenario might be as follows:

> Due to growing concern over the water quality in Acronym Creek, local residents, representatives of the local conservation district, and some town officials had recently started meeting to discuss what might be done. With the passage of HB 546, and because Montana's 303(d) list showed Acronym Creek as a high priority for TMDL development, DEQ staff contacted the group and offered their assistance with finding solutions to the temperature and turbidity problems.
>
> State water quality staff traveled to Abbreviation, reviewed the condition of the Creek, took water quality samples, and met with residents and others regarding potential solutions. They calculated estimates of the share of the pollutant loading that might be attributable to certain land uses, and determined how much the total loading might have to be reduced to bring the Creek back into compliance with water quality standards.
>
> After several meetings among residents and state and local officials, it was determined that if half of the total length of the currently denuded stream banks could be revegetated, that temperature fluctuations might be reduced over a period of a few years to the point of compliance with

standards. Since the vegetation might also hold more sediment in place, the turbidity should also be reduced, thereby resolving that problem automatically.

The owner of the ranching operation agreed that if plantings were of no cost to him, and he was successful in getting a grant to fence off his cattle from all but select portions of the Creek, that the revegetation could occur along bare portions of his creek frontage. Several residential property owners agreed to include their creek frontage in the revegetation project, too.

The DEQ and the conservation district helped to develop an affordable planting list (mostly willows), and mapped the locations for revegetation. They documented the calculations and solution as Acronym Creek's TMDL, and the Creek was removed from the 303(d) list.

The following spring the Conservation District sponsored the willow slip cutting and planting and a town potluck in the park afterwards. Monitoring over the following two years showed that temperature fluctuations had decreased and the water intake was less problematic. Kids were catching more fish in the creek, too.

Implementation Challenges...

HB 546 addressed many issues brewing in Montana in 1996. But, many still remain, and the bill itself created its own challenges. For example, the issue of how to determine when a water body meets or does not meet standards -- does one exceedence during a flood or drought event automatically qualify it as impaired? Also, petitions are coming in to delist waters. HB 546 gives the DEQ 60 days to answer a petition, and answers require analysis. And, if much of the emphasis is on a locally-driven, voluntary approach, is that consistent with the mandate to get the job done in 10 years? There will be increasing numbers of TMDLs to monitor and evaluate; a lot of coordination which needs to happen; a statewide advisory group that needs to be staffed; a big state; a starting list of 800+ threatened or impaired stream segments and lakes that needs to be evaluated; many TMDLs that will need to be prepared; multiple issues for each water body; and the lawsuit.

Many challenges loom. As one DEQ staffer put it, the greatest challenge in HB546 implementation is...

> *finding efficient approaches to TMDL development that get the job done water quality-wise, achieve a high level of local buy-in, are politically correct, cost-effective, and minimally burdensome on landowners (financially, culturally, and otherwise).*

. . . Sounds pretty challenging.

Want to Know More?

If the acronyms and complexity have not put you off, there are a variety of ways to track the progress of this program.

- You can request to be added to DEQ's mailing list for their newsletter that addresses these programs.
- The Legislature's Environmental Quality Council (EQC) conducted legislative oversight of HB 546 implementation and assisted with policy-related issues -- you can contact either EQC staff or EQC members regarding these efforts;
- You can locate and participate in TMDL-related efforts in your area -- there are currently TMDLs being

developed for the Upper Clark Fork, Flathead Lake, Tenmile Creek (Helena area), and other streams and lakes. DEQ staff can provide you with a current list of TMDL efforts in the state;

- HB 546 implementation is an on-going effort requiring continued funding to progress at a sustained level over the 10-year timeframe. Legislators can prepare to effectively review the progress of this program during upcoming sessions.

Also, Chapter 3 of this report provides answers to frequently-asked questions on the DEQ's water quality monitoring, assessment, and improvement efforts. Chapter 4 presents several case studies of such efforts in progress in various locations in Montana.

And for you AAs (Acronym Advocates)...

The entire foregoing can be summarized as follows:

> Section 303(d) of the CWA requires MT to assess SWs and list WQLSs. TMDLs must be developed for WQLSs, and EPA must ensure states make progress in doing so... Montana has a list, but not many TMDLs. Despite WETA holding a forum, DEQ developing a BP and AA and starting a bill draft, EPA got a NOI in December. The DEQ product went to LSD, and HB 546 resulted, providing specific direction and authority to DEQ for TMDLs, the list, coordinating with the STAG and WAGs, developing and incorporating BMPs for NPS discharges, and developing WAs and WLAs. They had a year to figure out how to do it, and 10 years to get it done. The EQC's WPS tracked DEQ's progress over the FY 1997-1998 interim, including the use of the new FTEs, and can fill you in on the progress.

Just FYI...

CHAPTER 3. FREQUENTLY-ASKED QUESTIONS

The following questions are from discussions with DEQ outreach and program management staff and questions asked of Montana University system Water Center staff (in response to the Center's TMDL web page, constructed in early 1998). Answers provided are based upon existing information and consultation with DEQ staff.

WHAT'S THE 303(d) LIST?

Section 303(d) of the federal Clean Water Act (and related regulations) requires states to assess the condition of their waters to determine where water quality is impaired (does not fully meet standards) or threatened (is likely to violate standards in the near future). The result of this review is the 303(d) list, which must be submitted to the EPA every other year. Section 303(d) also requires states to prioritize and target water bodies on their list for development of water quality improvement strategies (i.e. TMDLs), and to develop such strategies for impaired and threatened waters.

What's the history of the list?

The federal Clean Water Act passed in 1972. It wasn't until 1978 that the EPA started requiring states to submit 303(d) lists and TMDLs, but they provided no guidance on how to do so. The EPA lost its first court case on this topic in 1984 and in 1991 issued their first guidance document, which was developed jointly with states.

Montana has been documenting water quality conditions in the state since the mid-1970s. The results of these reviews have been submitted to the federal Environmental Protection Agency (EPA) on a regular basis (as part of the federally-required 305(b) reporting), but were not officially termed 303(d) lists until 1992. Montana's 1996 and 1998 303(d) lists included about 800 waters considered to be either threatened or impaired.

Passage of HB 546 in 1997 required the DEQ to evaluate all waters on the list to determine if "sufficient credible data" was used in their listing. The review is to be complete by October of 1999. State law requires that any waters not meeting the test must be removed from the list and reassessed.

How can I find out if a stream or lake is on the list and for what reason?

The 1998 version of Montana's 303(d) list is posted on the Montana University system Water Center website (http://water.montana.edu/docs/tmdl/303d/303dContents.htm). The list is also available from DEQ in paper format (contact DEQ's Monitoring and Data Management Bureau -- 406-444-4820). It is lengthy (over an inch thick in paper copy), and it includes DEQ's assessment of what is causing the impairment and which land uses may be the major contributors.

Sample pages from the list (which show the entries for three of the four examples provided in Chapter 4) are included in Appendix C of this report.

Some streams on the list go dry . . . How can there be water quality problems if there's no water?

Given the general Montana Water Quality Act goal of providing a "comprehensive program for the prevention, abatement, and control of water pollution," even streams that go dry are subject to listing on the state's 303(d) list. According to DEQ staff, Montana's numeric water quality standards apply when water is in a stream or lake. If the waterway is intermittent (flow may disappear at some point in the year) or ephemeral (flows typically only occur during and soon after rain events), DEQ's "general prohibitions" apply, which generally prohibit placing waste where it is likely to cause pollution of state waters (see 75-5-605, MCA).

Naturally intermittent streams, when flowing, can carry sediments and other pollutants which are major contributors to water quality problems downstream. For example, waste placed in a dry wash can be carried downstream in a future storm. Also, DEQ staff note that ephemeral streams often contain deep pools that do not dry up except under extreme drought conditions. These pools are safe havens for hearty aquatic life and migratory waterfowl. Other species have evolved to withstand dry spells. They form cysts, burrow into the soft mud, or even move into the gravel in alluvial aquifers.

If lack of year-round stream flow is human-caused and lack of flow results in a designated use (e.g. support of aquatic life) not being fully supported, the stream may be placed on the 303(d) list due to problems related to "flow alterations". (See Appendix C for examples of where "flow alteration" is listed as a probable cause of impairment for some water bodies.)

What's the difference between being listed as impaired vs. threatened?

Impaired water bodies do not fully meet water quality standards (i.e. do not fully support their designated uses), even though required technology-based controls and Best Management Practices may already be in place.

Threatened water bodies currently fully support their designated uses, but:

1. there is a new or proposed pollution source in the watershed that is not subject to the requirements of a discharge permit, the Montana water quality nondegradation law, or reasonable soil, land, and water conservation practices, or
2. there is a documented declining trend in water quality.

Will one bad sample put a water on the list?

For most uses, not likely. In some drinking water cases, maybe.

For decisions related to most nondrinking water uses, one bad sample wouldn't put a water on the list unless the sample shows a toxic chemical at a level way beyond health standards. Even then, one bad sample would likely be investigated to see if it was the result of laboratory error, and then be resampled to

confirm the finding.

DEQ staff have developed a preliminary decisionmaking framework for evaluating whether certain levels and combinations of information are sufficient to determine whether or not water quality standards are being met (and designated uses fully supported). This is described in **Appendix E** of this report. Their criteria generally require that two of three types of information (i.e. chemical, physical, or biological) be provided, and the information for each type generally requires more than one sample. There is room for situations where overwhelming evidence allows the use of only one category of information, but these situations are rare.

In some drinking water cases, however, if one water sample was taken and analyzed according to DEQ's sampling criteria, and the result shows an exceedence of drinking water standards, and that sample is the only information DEQ has upon which to draw a conclusion, they would likely determine the water is not supportive of drinking water uses.

The following simplifications of three examples from the Great Falls area illustrate how data quality is considered in making listing decisions.

Example #1 -- Muddy Creek: Muddy Creek flows into the Sun River upstream of Great Falls, Montana. This creek's listing is supported by overwhelming evidence of problems associated with the support of aquatic life. Photo documentation of the entire stream length showed significant erosion and downcutting. The documentation is sufficiently credible -- no other data are necessary to support the decision that the creek is not fully supporting aquatic life.

Example #2 -- Big Otter Creek: Big Otter Creek flows into Belt Creek between Stanford and Great Falls, Montana. In this case, information on the stream included bug and plant samples, a well-documented and standardized habitat assessment, and long term water chemistry (i.e. suspended solids and nutrients) information. DEQ staff determined the combination of information was both credible and sufficient to be used in a listing decision. They also determined that two of the three categories of information showed the creek could not fully support aquatic life, thus the creek should continue to be shown on the 303(d) list.

Example #3 -- Ford Creek: Ford Creek is a small creek located south of Augusta, Montana. This creek was listed with questionable information related to fish and other biological parameters, only one photo, and no chemical or toxic-related information. As a result, the data is not sufficient to support its listing, and DEQ must reassess it. According to state law, if the DEQ cannot reassess it before the next 303(d) list is sent to the EPA, or if they reassess it and find that results show it should not be on the list, it will be proposed for removal from the 303(d) list.

HOW IS A STREAM/LAKE REMOVED FROM (OR ADDED TO) THE 303(D) LIST?

Anyone can formally petition the DEQ to add or remove a stream or lake from the list. If the petition includes good quality data (and enough of it), the DEQ must determine whether that data shows that the water fully supports its designated uses (see discussion above, and **Appendix F**). The DEQ must respond to the petitioner within 60 days.

In addition, the DEQ encourages people to work cooperatively with the Department to evaluate whether waters in their area should be included on the list or not. Additions to or removals from the list can be initiated in the following ways:

1) **Formal Petition** -- Someone petitions the DEQ to add a water body to the 303(d) list. The petition includes enough information of sufficient quality that the DEQ can use it (possibly in combination with what they have on file) to determine whether the water fully supports the uses it has been assigned. If they determine the uses are not fully supported, the water would be considered impaired and placed on the 303(d) list. As of October 1998, three of the petitions submitted to the DEQ had met the DEQ's criteria for an acceptable formal petition; all were to remove waters from the list. For one petition, three streams were petitioned for removal, but the DEQ decision was to keep them all listed. For another, removal is still being considered (as of December 7, 1998), with a draft decision to remove part of the stream. For the last petition, the stream is scheduled to be removed from the Year 2000 303(d) list. DEQ staff note that they interpret the statutes to require them to go through a 60-day comment period for a new list (which results from a change) and that a new (i.e. modified) list must be approved by the EPA.

2) **Regular overall reviews of the list** -- Currently, the EPA requires the DEQ to review and revise the 303(d) list every two years. In doing so, they must consult with conservation districts, watershed groups, and others in various locations in the state. DEQ's last round of meetings to revise the list was held in February and March of 1998 and included public meetings in Havre, Glasgow, Glendive, Billings, Lewistown, Great Falls, Bozeman, Missoula, Kalispell, Colstrip, Helena, and Dillon. Unless the EPA revises the timing requirements for submission of revised lists, the DEQ will conduct another round of meetings to review the list in late 1999. Participants at these meetings are encouraged to provide information related to whether waters in their area should be added or removed from the list.

3) **Independent Informal Request** -- The DEQ has received several requests from persons interested in removing waters from the list. These requestors have not initiated a formal petition, thus have not been held to the strict data submission requirements of the formal petition process. In turn, DEQ workflow has been less disrupted than with the formal petition process and its attendant strict response deadline (60 days). This has allowed the interested parties to thoughtfully review the situation and work with local interests to respond to their requests. Some waters have come off the list in this manner, including East Spring Creek (near Kalispell), where local landowners and agency representatives worked hard to improve stream conditions over several years. The result was full support of designated uses, and the featuring of the results as a nonpoint source program success story in a national publication. About 200 landowners were involved.

4) **DEQ's continued assessments** -- Although the DEQ has many immediate assignments related to the existing list and its review, they were mandated to continue to assess other waters in Montana. If, in these assessments, the DEQ finds waters that do not fully support their uses, these would be added to the 303(d) list. This may occur during their required reviews and revisions of the list (at least every five years), which will include opportunities for public involvement.

Waters currently on the list can be removed for the following reasons:

1) **Water quality is fine** -- Many of the lakes and streams on the 303(d) list were placed there over 10 years ago. In some cases, there was limited information to use in decisions whether to list. Some may have been listed that should not have been. Water quality may have improved on others since their listing. A petitioner (see above), the DEQ, or another entity may provide the information necessary to show that a water should be taken off the list because water quality is fine. For example, in 1996, Garfield Conservation District, agency representatives, and landowners worked with DEQ staff to gather information showing that Little Dry and Big Dry Creeks (near Jordan) were fully supporting their designated uses. The upper portion of Big Dry and all of Little Dry were removed from the 1998 303(d) list.

2) **A water quality improvement strategy is developed** -- The 303(d) list is a state's list of waters "in need of TMDL development." That means that if a water quality improvement strategy can be developed that addresses the parameters of concern (e.g., nutrients, temperature, etc.), and meets the eight criteria (see **Appendix G**), the strategy can be submitted to the DEQ as a TMDL. Once the EPA acknowledges that the strategy meets the criteria, the water can be removed from the list. Two examples of waters removed from the list in this manner (Clark Fork and Deep Creek) are discussed in the next chapter.

3) **Inadequate information was used to list** -- The DEQ is required (by October 1999) to review the current 303(d) list to ensure they have enough information of sufficient quality to justify each water's placement on the list. (Appendix E contains DEQ's criteria for determining whether adequate information exists.) Any stream or lake without the necessary level of information must be removed from the list and reassessed. If the water is removed in this manner, it stays off unless the reassessment determines it should be put back on the list.

4) **Impairments are natural** -- Montana state law addresses the effects of natural inputs on water quality as follows:

> **75-5-306. Purer than natural unnecessary -- dams.** (1) It is not necessary that wastes be treated to a purer condition than the natural condition of the receiving stream as long as the minimum treatment requirements established under this chapter are met.
> (2) "Natural" refers to conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil, and water conservation practices have been applied. Conditions resulting from the reasonable operation of dams at July 1, 1971, are natural.

According to DEQ staff, if impairments meet the definition of "natural", above, the water can be proposed for removal from Montana's 303(d) list. (See also the answer to the question, "What if there's no way to meet water quality standards?" on p.21.)

WHAT IS A TMDL?

Technically, a TMDL is the total amount of a pollutant, per day, (including a margin of safety) that a water body may receive from any source (point, nonpoint, or natural background) without exceeding water quality standards.

Practically, the term refers to a plan or strategy to return a water body to compliance with water quality standards and therefore fully supporting of its designated uses. It could be called a "water quality improvement plan." Once a water is back to fully supporting its designated uses, a water quality plan can help a community maintain their desired level of water quality.

What is the process to develop a TMDL?

The steps DEQ encourages communities to undertake to improve water quality include:

Getting Started -- Find out more about the water quality of the stream or lake you are interested in. Determine the uses it is designated to support (see Appendix B). Check to see if the water is currently listed on the 303(d) list as threatened or impaired (you can do this over the Internet, or by calling DEQ staff). From what you know about the water, do you agree? Talk to others in your community about what they think about the quality of the stream or lake. Contact your local

Conservation District (normally one for each county), to see if they (or others) are working with the DEQ in reviewing and/or addressing water quality for the stream or lake you're interested in.

Assessment -- Presuming there are water quality problems, a good assessment of water quality conditions provides a foundation for an effective improvement strategy. If a water is listed, DEQ staff would have information on what was used to list it, and any other information about it that they have obtained. You can collect additional information regarding water quality, but you may want to consult with DEQ staff or the Volunteer Water Quality Monitoring Program at MSU before starting -- ask them to help ensure that the information you plan to collect can be used by the agencies to make good decisions. They can also help train volunteers, and may be able to provide additional technical or financial assistance, depending upon priorities at the time. (See Chapter 4 for examples of how the assessment step has been completed for different waters in Montana.)

Strategy Development -- With the information from the assessment, the group is ready to develop a plan. First, the group sets their goals and objectives. Then they determine who is willing to do what and how much it will cost. A good understanding of water quality issues from the assessment phase should provide for focussed work among local interests and agency specialists to develop appropriate and effective approaches, locations, and entities to address the issues documented in the assessment. Some landowners may be more able or willing to initiate water quality improvement projects on their land, or costs may vary by type of project capable of resolving issues. This is an opportunity to be creative in the mix of approaches that will work for a specific area and set of issues and participants. The strategy should:

- address the most important sources of pollution,
- identify who will do what to address issues, and
- contain specific water quality goals (i.e. targets).

The plan should also include proposals for how to monitor a water's response to your projects (i.e. measure progress toward achieving the targets set). Monitoring strategies should:

- be cost-effective,
- rely on locally-available ability and technology, and
- relate well to the targets set in the water quality improvement strategy.

(The next chapter of this report includes examples of water quality improvement strategies developed for several different types of waters in Montana.)

Implementation -- During the implementation, or "gloves and boots" phase, projects identified in the water quality improvement strategy are put into motion. If there are insufficient resources to implement all components of the strategy, this phase may continue while additional funds are obtained and corresponding projects initiated.

Monitoring -- In the monitoring phase, participants can see how the water responds to the projects developed for it. Did the actions address the problems? How quickly? Since your strategy needs to include an element that proposes how you will assess movement toward full achievement of water quality standards, this is where the "rubber meets the road" -- were you right about what you proposed? Local volunteer groups or school classes could help with this step.

Can we do our own assessments?

You can collect information and use DEQ's "use support" criteria (Appendix F) to evaluate how your water body supports or doesn't support its designated uses. The DEQ has the responsibility to make the call on whether a water is added or removed from Montana's 303(d) list. They also require certain levels and amounts of information to begin the process of making a use support decision. Others may be

interested in the same water you are, and may have already started an assessment -- try calling the DEQ or your local Conservation District to see if anything has been started. If not, talk to them about getting something going. If there are others that are interested in participating in an assessment, be sure to contact DEQ Monitoring/Assessment staff before starting. They can tell you what information they may already have on a water body (thereby reducing what you need to collect for a complete assessment). They can also help you develop your methods, parameters, and sampling locations to ensure the results will be usable for a water quality improvement plan (TMDL) or for a listing/delisting decision. (See **Appendix H** for an overview of the information DEQ staff propose to collect when they do an assessment.)

WHY SHOULD WE GET INVOLVED IN THE WATER QUALITY IMPROVEMENT PROCESS?

There may be several reasons to be involved in the water quality improvement process:

Clean water is important to Montana and Montanans. Montana's Constitution conveys to Montanans the right to a clean and healthful environment. It also recognizes the duty of each Montanan to contribute to the achievement of that aim. Montana's elected representatives enacted and amended the state's Water Quality Act, the purpose of which is to prevent, abate, and control water pollution. In general, communities that can maintain healthy streams and clean water have more choices as to the uses of those waters (economic, recreational, and aesthetic), and the scale and type of additional economic development the area can support.

There are a variety of learning and community involvement opportunities. Getting involved now can provide opportunities to learn about water and biological resources, the role they play in your community, the people and animals that depend on them, and what may be affecting your community's ability to benefit more fully from clean water.

You can help develop appropriate water quality improvement strategies, rather than someone developing them for you. One of the reasons the 1997 Legislature passed the law that steps up Montana's approach to water quality improvement was the threat of a lawsuit resulting in Montana losing control (to the federal EPA) over water programs in the state. However, retention of that control is not assured; presuming federal water quality laws stay the way they are, the state must show progress in assessing its waters and developing water quality improvement strategies (TMDLs), and have 10 years (from 1997) to develop these strategies for many hundreds of streams and lakes in Montana. Although the DEQ is currently relying on locally-led water quality improvement strategies, they are required to address water quality problems. If the locally-led approach doesn't succeed in broad gains toward Montana's water quality goals, the DEQ will have to develop water quality improvement strategies for non-participating areas. As with any agency developing such plans from afar (and under a specific deadline), proposals may be less than the "best fit" for local decisionmakers, landowners, and other citizens.

How will involvement affect my livelihood?

It will be up to the landowners and others in the local community to determine what approaches are the best fit for them to improve water quality. Affordability and potential long term responsibilities are important considerations in determining what approaches are preferred. The more involved the people are that may need to take action, the more likely they can help develop strategies that will be economically

and technologically feasible for them.

People's lives will be affected in different ways; some people will choose to be heavily involved in water quality improvement; others not at all. Improved water quality may also directly benefit some more than others. If the combination of those willing to make commitments of time and/or resources and/or project sites results in an implementable strategy that will address the issues -- all are willing participants in a win-win situation.

Montana's water quality improvement law relies on voluntary approaches to address nonpoint pollution (e.g. that carried by runoff from broad expanses of land). It may be that, to reduce nonpoint source pollution, some land practices should be changed. If so, it would be up to the land manager to decide to do so. The DEQ is working to further develop suggestions for changes in land, soil, and water practices that pay for themselves. Some of these practices, applied to agricultural lands, have been shown to increase production over the long term.

There are a variety of sources of assistance with expertise, funding, administration, project implementation, and monitoring. Taking advantage of these resources can significantly reduce what might have appeared as unrealistic or insurmountable.

Are water quality improvement programs tied to other agency programs (i.e. endangered species and enforcement)?

Water quality improvement efforts have a lot in common with other types of resource improvement strategies, but every program has its own goals and implementation needs. The TMDL effort is not a vehicle for achieving endangered species restoration, but if a local community wishes to combine such goals, agency staff may help them do so. Local efforts to develop a water quality improvement strategy could be designed to meet a community's goals for drinking water quality, recreation potential, or native fish protection. Under this phase of the program, it is the local decisionmakers that determine what goals they wish to achieve.

What if, in assisting a local community in conducting a water quality assessment, DEQ staff notice something that might not be legal? First, the assessment staff are not DEQ's enforcement staff and do not have any specific enforcement-related assignments when they help conduct assessments. If they notice an illegal activity or a significant environmental problem, they will likely mention their concern to the landowner, offer assistance from other agency staff, and suggest the landowner discuss the situation with the local Conservation District.

Will what I agree to voluntarily become mandatory?

Montana's water quality improvement laws emphasize voluntary approaches to address nonpoint source pollution. All guidance (both state and federal) repeats that emphasis, and acknowledges that water quality improvements can take five years or more to have an effect. According to Montana's law, if voluntary measures do not lead to solution of water quality problems within 5 years, the DEQ must evaluate whether a new set of voluntary practices should be developed, more time should be allowed to show improvement, or the overall improvement strategy should be revised -- although the DEQ has

enforcement authority for persons polluting state waters, this portion of the law does not encourage formal regulatory actions. So far, Montana's water quality improvement strategies (TMDLs) submitted to and approved by the DEQ and the EPA rely heavily on voluntary approaches to address water quality concerns.

Many approaches involve a one-time expenditure of funds or resources (e.g., off-channel water development), with declining commitments over time. Obviously, if the voluntary strategies are effective in addressing water quality problems, there is no need to increase requirements. If water quality problems cannot be addressed through voluntary means over the long term, other mechanisms may need to be tried.

What about water rights?

House Bill 546 specifically states that water rights may not be affected by the TMDL process. Section 6 of HB 546 reads:

> **Section 6. Nonimpairment of water rights.** Nothing in [this act] may be construed to divest, impair, or diminish any water right recognized pursuant to Title 85.

What about just waiting until the 1999 list changes are made . . .?

DEQ staff must review the entire 303(d) list by October 1999 and remove any waters that do not have sufficient credible data to support their inclusion on the list. Any waters removed must be reassessed to determine whether (with sufficient credible information) they are threatened or impaired. In addition to the required review of available information, the DEQ may have received information on some of these waters which shows they fully support their designated uses -- if DEQ staff confirm "full support," these waters would be taken off Montana's list.

So, if persons believe that there is sufficient credible information that the DEQ has (or that can be provided to the DEQ) showing a water fully supports its uses, local representatives might wish to focus on other waters that are threatened or impaired that could use their attention. If the community goal is to get a water off the list, local representatives may wish to collect what information is lacking to show that it meets standards (thereby supporting all its designated uses). Even if a water is removed for lack of good information, it is put in the group that needs reassessing, and could go back on the list once the reassessment is done.

DEQ staff advise that the best approach for a local community that wishes to address water quality problems is to start local discussions about one or more water bodies where water quality is obviously impaired, whether it is to contribute to showing that the waters do not deserve to be on the list, and/or starting to develop strategies for waters they acknowledge could be improved. Communities may also wish to review the statewide prioritization process, to see if they agree with how their waters rank regarding the immediacy of the need for a water quality improvement strategy -- if local priorities are different, they should communicate that to the DEQ, so those priorities can be worked into the process.

What if we don't participate at all?

It is up to local residents and landowners to decide whether or not they wish to get involved in learning about water quality issues and crafting approaches to address local priorities for water quality improvement. Some may decide not to participate. Some landowners may decide to deny access through their property to streams and lakes. Nonparticipants, however, lose the opportunity to share their views and concerns. They may also miss an opportunity to benefit from grant funds and incentive payments.

If landowners do not grant access, assessments must still be done, but might be incomplete or inaccurate if the full waterway cannot be easily viewed. Since the assessments form the basis of what strategies local representatives develop to address water quality issues, they may not be able to develop an appropriate strategy, the strategy may not be able to address the problems, or others in the watershed would need to bear an unrepresentative portion of the responsibility to improve water quality.

According to Montana law, water quality improvement strategies (TMDLs) will likely be needed for hundreds of waters by the year 2007. At this point, the DEQ is relying on locally-developed approaches to address water quality problems. But, they must meet this timeframe -- if local solutions can't be developed, the DEQ will have to develop them without the benefit of local input. Lack of participation could result in a missed opportunity for local communities to take a leadership role. Also, with limited public resources, those that request first, who get their priorities into the state system first, and who show commitment to following through will likely get the first shot at the help they need to address what can be fairly complicated issues.

AND IF WE WANT TO GET STARTED...?

If you are a **citizen just learning about water quality issues and opportunities**, and have a specific water body you are interested in, you can review Montana's 303(d) list to see what conclusions have been drawn about that stream or lake. The Montana University system Water Center provides the list via the Internet (http://water.montana.edu/docs/tmdl/303d/303dContents.htm). Paper copies of the list (over an inch thick) can be requested from the DEQ at 406-444-4820.

Whether you want to check the list yourself or not, you may also wish to contact your local Conservation District to see what they know about the water you are interested in and whether they (or others) have initiated any efforts to collect related water quality information or develop an improvement strategy for that waterway. Conservation Districts generally follow county lines; board members are elected, and generally meet about once a month. Their meetings are open to the public.

If you want to know about why a water was listed the way it was, or what water quality information is needed to add or remove a water from the list, you can contact DEQ's Monitoring and Assessment staff. If you want to know about how to get going on development of a water quality improvement strategy (TMDL), you can call DEQ's TMDL outreach coordinators (see next answer for specifics).

If you are a **board member of a Conservation District**, you may wish to contact the Montana

Association of Conservation Districts to find out what other districts are doing regarding the 303(d) list and the development of water quality improvement strategies (TMDLs). They can also provide guidance on whether and how districts might create and support water quality committees and potentially sponsor and/or coordinate with other watershed groups.

Who can help?

As mentioned above, there are a variety of individuals and agencies that can assist persons and groups interested in water quality assessment and improvement, including:

Local Conservation Districts -- Appendix I includes a map of Montana's Conservations Districts and information on their typical meeting schedules. Also, DNRC's Conservation Districts Web page (http://www.dnrc.state.mt.us/cardd/consdist/consdist.html) provides interactive access to Montana Conservation District information.

DEQ's Monitoring and Outreach Staff -- The DEQ has one Monitoring and Assessment coordinator, and one Outreach coordinator, for each of four regions of the state, as follows:

West Slope Region:		
Monitoring/Assessment Coordinator	Mike Suplee	406-444-0943
Outreach Coordinator	Roxann Lincoln	406-444-7423
Upper Missouri Region:		
Monitoring/Assessment Coordinator	Perri Phillips	406-444-0715
Outreach Coordinator	Dave Martin	406-444-5317
Lower Missouri Region:		
Monitoring/Assessment Coordinator	Carol Endicott	406-444-2680
Outreach Coordinator	Carole Mackin	406-444-7425
Yellowstone Region:		
Monitoring/Assessment Coordinator	Pat Newby	406-444-3474
Outreach Coordinator	Vicki Sullivan	406-444-7424
DEQ/NRCS Liaison (statewide)	Tom Pick	406-444-4765

Other Agencies -- There is a variety of other agencies that are actively involved in water-related assessment, planning, and projects in Montana, including:

Montana Department of Natural Resources and Conservation		
Water Resources Division	Rich Moy	406-444-6633
Conservation Districts Bureau	Steve Schmitz	406-444-4491
Montana Department of Fish, Wildlife and Parks		
Fisheries Division	local Fish Biologist	(check local phone book)
Future Fisheries Program	Glenn Phillips	406-444-2406
Native Species Coordinator	Ken McDonald	406-444-2449
U.S. Natural Resources Conservation Service		
Resource Conservation Program	local Resource Conservationist	(get contact from local Conservation District)
U.S. Forest Service	local District Ranger, or Hydrologist in the relevant Forest Supervisor's Office	
U.S. Bureau of Land Management	local Area Manager, or Hydrologist in nearest District office	
U.S. Fish and Wildlife Service		(check local phone book)
U.S. Bureau of Reclamation	(check local phone book to see if there is a BuRec project or office in your area)	
City and County Governments	local planner, engineer, or sanitarian	(check local phone book)
County Water Quality Districts	(four currently exist in Montana)	(check local phone book)

Private Entities and Other Groups -- There is a growing number of private contractors that are available to help with planning, monitoring, and project work. Costs vary for this type of assistance. The Montana Watershed Coordination Council (http://water.montana.edu/docs/watersheds/MWCChome.htm) may be able to connect you with resource specialists. Their online directory of watershed groups (http://btc.montana.edu/Scripts/t3cgi.exe/watercenter/databases/watershed_groups/index.taf) may also help you network with others in Montana that may share your concerns or who may have helpful hints for you. If you do not have computer access, you can obtain information on the Council by calling the DNRC Water Management Division at 406-444-6637.

The Montana University system, and other educational institutions, may also be able to provide student and/or faculty assistance. See the University system Water Center website (http://water.montana.edu/) for a wide variety of information, including an "expertise directory" of university faculty and programs. If you do not have computer access, you can reach the Water Center by phone at 406-994-1772.

Where can we get funding for what we need to do?

As with technical assistance, there are a variety of funding programs that might provide resources for local water quality-related assessments, strategies, projects, and the administrative resources needed to pursue them. The most up-to-date listing of such resources is on the Montana Watershed Coordination Council website (http://btc.montana.edu/Scripts/t3cgi.exe/watercenter/databases/watershed_finance/finance.taf). Those with access to the Internet can use this site to search by key word a variety of federal and state assistance programs.

For example, a September 1998 query of all the entries on the site, using the keyword "private land," generated a list of eight different programs which may assist persons looking for help with projects on private land. The site provides information on each of the programs, including the program focus, type of funding available, who can apply, what types of projects are eligible, limitations on funding and any match requirements, application requirements and procedures, and what types of technical assistance come with a successful grant.

If you are unable to access the MWCC funding resource directory by computer, the DNRC Water Management Division (406-444-6637) may be able to provide you with a hard copy, or you may wish to contact the DEQ, your local Conservation District, the NRCS, the Montana university System Water Center, or other agencies with natural resource responsibilities.

In addition to funding resources, there may also be agency staff whose technical expertise or current activities relate to waterway. These staff may be involved in resource improvement projects in your area, or in the permitting of new developments, whose activities may assist (or further challenge) your water quality improvement efforts. Your local Conservation District may be able to direct you to the agency that has jurisdiction over such activities (e.g. subdivision review, cleanup of abandoned mines, industrial discharge permitting, etc.). They may also have a copy of the Montana state agency directory, so you can check on your own who might be the appropriate contact people for your questions.

QUESTIONS THAT COME UP ALONG THE WAY...

Those that have started the water quality assessment and improvement process are coming up with some common questions along the way. These are answered below, with the hope that the answers might help others maximize their efficiency in getting started.

What if there's no way to meet water quality standards?

Some waters may be incapable of meeting Montana's general water quality standards due to contributions from natural sources. For example, natural sources of arsenic (from geothermal activity in the Yellowstone area) cause the Missouri River to exceed water quality standards. Section 75-5-306(2) of Montana's statutes define "natural" as:

> ...conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil, and water conservation practices have been applied. Conditions resulting from the reasonable operation of dams at July 1, 1971, are natural.

Natural sources are included as reasons for listing some waters on the 303(d) list. In cases where natural sources are causing a water body to exceed standards, the EPA encourages states to develop a **site-specific water quality standard** for that water which acknowledges and accommodates the natural condition. If natural sources are the only reason a water is included on the 303(d) list, developing a site-specific water quality standard would allow the water to be removed from the list, as conditions would no longer be causing exceedences of water quality standards. DEQ legal staff note that 75-5-310, MCA, provides the department with the authority to develop site-specific water quality standards for aquatic life. EQC staff have not investigated whether that authority is broad enough to allow the DEQ to develop site-specific standards for other designated uses.

When the classification of Montana's waters was done (1950s), classifications were applied broadly. Some waters have since been shown to have been mis-classified at that time. If water quality issues are not due to natural causes, but it is unlikely a water has or ever could support a use it's been classified for, an option is to suggest the water be **reclassified**. The Board of Environmental Review has the authority to reclassify a water, if it was originally mis-classified. (They can also upgrade a classification, to require the water to support more or different uses.) Under current interpretations, however, the Board is prohibited from otherwise reclassifying waters that would result in less stringent water quality standards. As an example, in 1998, the Board reclassified the upper part of Sage Creek due to finding that there was sufficient credible data to indicate the stream was supporting a cold water fishery, which had not previously been a designated use.

DEQ staff note that EPA regulations allow for an evaluation process to determine whether designated uses should be changed if they cannot be met due to natural (or other) conditions. It is not clear however, how compatible this process is with the Montana statutes prohibiting reclassification if such reclassification would downgrade water quality standards.

Presuming a water was appropriately classified, once an assessment is done and water quality problems identified, achieving standards may seem impossible. There are examples, however, where water quality concerns seemed insurmountable, only to be achieved through **perseverance, creative approaches, new technology, and adequate resources**. For example, who would have thought that the Tri-State Implementation Council could truly coordinate voluntary agreements to reduce nutrients along the entire Clark Fork River in Montana? (See the next chapter for more information on the effort.)

What level of BMPs is sufficient?

"BMP" is short for "Best Management Practice". Montana law uses and alternate term in its TMDL statutes -- "reasonable, land, soil, and water conservation practices" -- defined as:

> . . . methods, measures, or practices that protect present and reasonably anticipated beneficial uses. These practices include but are not limited to structural and non-structural controls and operation and maintenance procedures. Appropriate practices may be applied before, during or after pollution producing activities. (ARM 17.30.602(21))

Montana's water quality improvement law requires the DEQ to develop and support these voluntary

practices to help landowners address nonpoint source pollution.

Each water quality improvement plan, if nonpoint sources of pollution are involved, should include what the developers of the strategy thought would be the most effective and appropriate BMPs to resolve water quality problems. For example, the strategy for Freezout Lake includes efforts to conserve water on a broad scale to reduce runoff from selenium-rich areas.

If effective BMPs are implemented, water quality conditions should improve and the monitoring should confirm the improvement. If water quality standards are achieved, the level of BMPs applied were sufficient. If conditions are improving, but standards aren't yet met, the level of BMPs applied may still be sufficient, but more time may be necessary to document their success.

In short, the appropriate level, location, and type of BMPs are those that most effectively and economically bring a water back into compliance with water quality standards.

How do we deal with flow alterations?

Impairments due to flow alterations are those whereby the flow regime has been altered enough that the channel structure and/or stability, aquatic habitat, or water column chemistry has been significantly modified from what might be expected without human influence. Water can be added and diverted from stream channels without causing major changes to channel structure and/or stability. However, there are cases where changes in flow have been determined to be a source of impairment. Three examples of flow-related issues are provided below:

Careless Creek -- The DNRC sells irrigation water stored in Deadman's Reservoir to downstream users on the Musselshell River. A canal connects the reservoir to the Musselshell, but the canal cannot presently carry the volume needed to get the purchased water down to the users. So, the DNRC diverts the water through Careless Creek. High, sustained flows of irrigation water have severely eroded the banks of the Creek, causing the Creek's listing on the 303(d) list as impaired due to flow alteration.

Beaverhead River -- Years ago, Clark Canyon Reservoir was operated under a regime that released high flows at various times. The flows were such that biologists were concerned about gas buildup in the releases affecting the trout fishery downstream. The reservoir release regime has since been modified to release less volume, but over a longer time, and concerns have been reduced. The Beaverhead trout fishery is one of the most productive in Montana and the DEQ will evaluate whether dam operations should continue to be shown on the 303(d) list as a threat to the Beaverhead fishery.

Ruby River -- Dewatering of the Ruby River resulted in two fish kills, as well as water shortages for downstream irrigators, during drought conditions (e.g. 1985 and 1987). In 1995, Ruby River water users developed and implemented a water delivery and dewatering prevention plan, including streamflow monitoring, installation of adjustable headgates and measuring devices, a communication network among water users, and an action plan to decrease water diversions when needed to prevent dewatering. Minimum flows that trigger action will be set at some time between years 2000 and 2005 based on streamflow data now being collected.

In general, there are a variety of mechanisms to address flow-related impairments; the appropriate approach depends upon the nature of the problem. The above examples illustrate some of the ways the issues can be addressed by a community. DEQ and DNRC staff can assist a community in deciding what

flow-related mechanisms (e.g. voluntary flow agreements, dam alterations, alternate water supply routes, water leasing, etc.) might be applicable to the situation.

How long do we have to monitor?

The short answer... Until monitoring shows the problems have been solved.

The technical answer... In order for a water quality improvement strategy to be approved, it must have a monitoring component to it. This is how a community determines whether the plan they developed and implemented is actually working to bring a water back into compliance with water quality standards. If the monitoring shows the water is back in compliance, technically, the monitoring could be discontinued. Many groups may prefer to continue monitoring as a way to keep track of their water body's health. The initiation of a monitoring program might involve local students who could use the water as an outdoor classroom, as well as contribute to the community by conducting long-term monitoring. For example, middle school students conduct water quality monitoring with *Project Freeflow* in the Flathead area. Seventh graders in the Lewistown area recently provided a national video conference presentation on the water quality and habitat data they have been collecting on Big Spring Creek.

Also, even though the issues that caused the water to be listed may have been addressed through the improvement strategy (TMDL), there are likely other land use changes that will occur over time that could affect water quality. A community with a long-term information base regarding water quality is better able to plan for proposed major changes in land uses in their area. Presuming the water continues to meet standards, they can also defend themselves from any petitions to list the water as impaired in the future.

Monitoring documents progress. For example, monitoring of Godfrey Creek (near Churchill) has shown a pronounced reduction (200%-300%!) in fecal coliform levels in the creek since the late 1980s.

WHAT'S HAPPENING STATEWIDE?

What is Montana doing now?

HB 546 created a framework for voluntary (for nonpoint sources), cooperative, locally-crafted TMDL solutions. The bill established a statewide TMDL advisory group representing fourteen interest groups, and another bill funded the DEQ $1.4 million (over two years) for TMDL development and implementation. The DEQ will consult with the advisory group, along with local conservation districts and watershed groups, on ranking and prioritizing streams for TMDL development. Water quality plans already being implemented in Montana are being reviewed to see if they could qualify as TMDL plans.

DEQ's monitoring staff are reviewing water quality data for listed waters to see if sufficient credible data were used to list them. If data is inadequate, the water bodies will be removed from Montana's list and be reevaluated in coming years.

What happens next?

The DEQ will continue to:

- further refine and prioritize the 303(d) list;
- calculate the allowable amount of pollution from wastewater point sources for each water body on the 303(d) list;
- work with Conservation Districts and other watershed project managers to develop TMDLs for existing water quality improvement projects;
- develop water quality improvement strategies (TMDLs), which would include Best Management Practices, for each water body remaining on the 303(d) list; and
- analyze monitoring data and work with project managers across the state to ensure that the water quality improvement strategies meet their goals (i.e., water bodies meet water quality standards).

The DEQ advocates a process that encourages local leadership in the development of water quality improvement strategies, offers as much individualized technical assistance as possible, customizes flexible solutions for each individual watershed, and delists water bodies when a water quality improvement strategy is developed and approved.

Which waters will have TMDLs prepared first?

At this point, local entities are deciding which waters they wish to work on to develop water quality improvement strategies to potentially submit to the DEQ and the EPA as TMDLs. However, there is also a statewide prioritization scheme that should reflect local interests, satisfy EPA requirements for ranking and targeting waters for TMDL development, and help the DEQ determine where to invest public resources to assist water quality improvement efforts statewide.

DEQ will develop a set of statewide priorities for TMDL development, with advice from local watershed groups, Conservation Districts, and the Statewide TMDL Advisory Group (STAG). These priorities must be reported to EPA. The DEQ must also report to the EPA which waters are "targeted" (i.e. the focus of at least some state resources) for TMDL development in the short term. The following are the prioritizations and targets for the 1998-2000 period, created through a pre-HB 546 (and less formal) prioritization and targeting rationale:

1998 Priority for TMDL Development

High Priority	Moderate Priority	Low Priority
*Clark Fork	Godfrey Creek	all others on 1998 303(d) list
Silver Bow Creek above Warm Springs	Big Otter Creek	
Silver Bow Creek below Warm Springs	Butcher Creek	
Mill-Willow Bypass	Otter Creek	
Warm Springs Creek	Big Spring Creek	
*Flathead Lake	East Spring Creek	
*Swan Lake	Musselshell River	
*Tenmile Creek	Ninemile Creek	
Daisy Creek	Threemile Creek	
Fisher Creek	Elkhorn Creek	
Soda Butte Creek	Blackfoot River	

Muddy Creek

Nevada Lake
Nevada Creek
Rock Creek
Libby Creek
Stillwater River
East Boulder River
Whitefish Lake

* = targeted for TMDL development by the year 2000

The above priorities and targets were determined under the pre-HB 546 system. Montana's new water quality improvement laws require that 13 topics be considered in developing this new prioritization system. As of September 1998, the STAG had drafted the rating (i.e. scoring) system shown below using the 13 considerations provided in the law. Entries in the right column show how a sample water body might rate according to the criteria presuming it received the score denoted by an asterisk.

Factor	score	weight	sample
Beneficial uses established for the water body:			
- Class A waters	2		
- Class B & C waters	1*		
- Class I (impacted)	0	3	1x3 = 3
The extent that natural factors over which humans have no control are contributing to any impairment:			
- Man-caused water quality problems predominate	2*		
- Uncontrollable natural factors are present but not the primary cause of impairment	1		
- Uncontrollable natural factors are the primary cause of impairment	0	1	2x1 = 2
The impacts to human health and aquatic life:			
- Non-supporting for human health and aquatic life use	2		
- Partial support for human health and aquatic life	1*		
- Supporting human health and aquatic life uses	0	3	1x3 = 3
The degree of public interest and support:			
- High -- clearly high interest and support	2		
- Moderate	1*		
- Low interest or local opposition	0	2	1x2 = 2
The character of the pollutant and the severity and magnitude of water quality standard noncompliance:			
- Toxic, persistent (e.g. organics, metals)	2		
- Nutrients, bacteria, temperature, or other conventional pollutants, sedimentation or salinity	1*		
- Naturally occurring pollutants	0	3	1x3 = 3
Whether the water body is an important high-quality resource in an early stage of degradation:			
- A-Closed or high quality resource waters in early stage of degradation	2		
- Blue Ribbon trout streams or wildlife refuges in early stage of degradation	1		
- Not a high quality resource	0*	3	0x3 = 0

Factor	score	weight	sample
The size of the water body not achieving standards:			
- Segments over 50 miles long and lakes more than 10,000 acres	2		
- Segments 10-50 miles long and lakes between 1,000 and 10,000 acres	1*		
- Segments less than 10 miles long and lakes less than 1,000 acres	0	3	1x3 = 3
Immediate programmatic needs such as waste load allocations for new permits or permit renewals and load allocations for new nonpoint sources:			
- Immediate anticipated programmatic needs	2		
- Minimal contribution to programmatic needs	1		
- No programmatic needs identified	0*	2	0x2 = 0
Court orders and decisions relating to water quality (proposed to not be rated)			NA
State policies and priorities, including the protection and restoration of native fish when appropriate:			
- High goal overlap	2		
- Moderate goal overlap	1*		
- Minimal goal overlap	0	2	1x2 = 2
The availability of technology and resource to correct the problems:			
- It is likely that technology and funds are available and adequate	2		
- Technology and/or funds uncertain	1*		
- Technology and/or funds unlikely to be available	0	2	1x2 = 2
Whether actions or voluntary programs that are likely to correct the impairment of a particular water body are currently in place:			
- High likelihood existing or planned actions or programs will restore water quality	2		
- Moderate likelihood	1		
- Low likelihood	0*	2	0x2 = 0
The recreational, economic, and aesthetic importance of a particular water body:			
- Supports high-value recreational, economic, and/or aesthetic activities	2		
- Moderate level of recreational, economic, and/or aesthetic value	1*		
- Limited recreational, economic, and/or aesthetic value	0	2	1x2 = 2
	total score for sample: 22		

The DEQ used several test cases to feed through this preliminary scoring system, generating the following results:

Test Water Body	Test Score
Spring Creek (near Clancy)	28
Prickly Pear Creek/Lake Helena	29
Big Spring Creek (Judith Basin area)	43
Horse Creek (Redwater Basin)	15
Carpenter Creek (Upper Clark Fork Basin)	22
Mulkey Creek (Upper Clark Fork Basin)	18

The next steps the DEQ envisions regarding development and implementation of the statewide prioritization system include:

December 4, 1998 -- DEQ staff presented these trial runs of the preliminary STAG rating system using water bodies on the 303(d) list; STAG determined they did not want to change weightings or other aspects of the rating approach.

Winter 1998 -- DEQ staff will conduct evaluations of rated waters for data sufficiency and whether (for waters with sufficient credible data) the beneficial use support determinations referenced on the list are correct.

February 1999 -- DEQ staff will present to the STAG additional examples of waters put through the draft rating process and share preliminary comments they received on the results from local watershed groups and conservation districts.

Spring/Summer 1999 -- DEQ staff will be working intensely to review 303(d) list entries and prepare a revised list.

October 1, 1999 -- DEQ's statutory deadline to apply the rating and prioritization system to all waters on the year 2000 draft 303(d) list.

Fall/Winter 1999 -- Public review of draft ranking and prioritization

April 1, 2000 -- EPA deadline for new 303(d) list from Montana.

And in the long run . . .?

The effective date of HB 546 was May 5, 1997, which provides a time marker for certain provisions of the bill. One of those provisions required the DEQ to develop a schedule for TMDL implementation for all the waters on the 303(d) list (as it read when the law was enacted). Important milestones from both the law and subsequent schedule, are as follows:

May 5, 1998 -- DEQ's deadline to develop a **schedule** for completing TMDLs by the year 2007 for all waters on the 1996 version of Montana's 303(d) list, and for determining a timeframe for developing TMDLs for water bodies listed after May 5, 1997. (The DEQ developed the schedule as required, and presented it to the Environmental Quality Council's Water Policy Subcommittee on May 7, 1998.)

January - May, 1999 -- The Statewide TMDL Advisory Group (STAG) and DEQ staff will hold public meetings with local watershed groups to get local input into ranking and prioritization of waters on the 303(d) list for TMDL development.

October 1 , 1999 -- DEQ's deadline to develop a database to **revise the 303(d) list.** The list must reflect whether sufficient credible data was used in the listings. Any waters lacking sufficient credible data must be removed by this date. The DEQ must reassess any waters removed for this reason. This product becomes the year 2000 303(d) list submitted to the EPA. It will reflect use of the ranking and prioritization scheme developed by the STAG and the DEQ, with local input.

This is also the DEQ's self-imposed deadline to develop **100 new water quality improvement strategies** (TMDLs), including:

- working with existing nonpoint source project sponsors to identify 20 NPS projects that will qualify as TMDLs and submitting documentation for them to the EPA for approval as TMDLs.
- working with conservation districts and local watershed groups to identify 20 watershed groups willing to begin TMDL projects;
- Meeting with the DEQ, DNRC, Montana Department of Transportation, and Department of Fish,

Wildlife & Parks programs to discuss participation in the TMDL implementation strategy with the goal of identifying 20 existing state agency projects for documentation and submission to the EPA as TMDLs;

- identify and support 20 new state projects that can qualify as TMDLs and submit them to the EPA as TMDLs; and

- developing agreements with the U.S. Forest Service (USFS), Bureau of Land Management (BLM), and Bureau of Reclamation (BuRec) on water quality restoration projects for approval as TMDLs (20 federal agency pilot projects).

October 1, 1999 - April, 2000 -- DEQ develops, conducts reviews, and submits revised 303(d) list to the EPA.

October 1, 1999 - June, 2003 -- The DEQ projects they can approve 300 additional TMDLs during this time period, including:

- 150 new TMDLs in conjunction with Conservation Districts and local watershed groups; and

- 150 new TMDLs from the USFS, BLM, and other government agencies.

June, 2003 - May, 2007 -- The DEQ projects they can approve 400 additional TMDLs in remaining impaired water bodies from the 1996 303(d) list.

May 5, 2007 -- By this date, the DEQ must have developed TMDLs for all water bodies on the water quality limited list of streams and lakes as that list read on May 5, 1997. (This deadline will not apply to water bodies added or removed from the list after May 5, 1997.)

Who's doing what?

TMDL development and implementation is a statewide effort for which the Montana Department of Environmental Quality (DEQ) is the lead state agency, but much work will be needed by other state agencies, local and federal agencies, local conservation districts, and local watershed groups. Here is a snapshot of what various entities are doing regarding water quality assessment and improvement in Montana:

DEQ:

- revising the 303(d) list, gathering available data on listed waters, helping with assessments, working to coordinate monitoring activities across agencies and interested groups, helping local entities understand and develop water quality improvement strategies that can remove waters from the list, and developing guidance for decisionmaking regarding the list and adequate levels of data.

Statewide TMDL Advisory Group (STAG)

- developing a draft statewide prioritization strategy to rate and rank listed waters for DEQ involvement with TMDL development, providing a multi-entity sounding board for DEQ staff to discuss program development and approaches, and determining their potential longer-term role (beyond the prioritization effort).

Conservation Districts

- Conservation Districts across Montana are taking varied actions related to TMDL-related revisions to Montana's water quality laws. Some are gathering information on the listed streams in their area; others are requesting some listed streams be reassessed; some have set up water quality subcommittees to develop suggestions on how to respond to program changes; others are determining whether they have the resources to participate at all.

Watershed groups

- A variety of watershed groups (some associated with Conservation Districts, some not) exist in Montana. They have been formed in a variety of ways to address a variety of issues. Some of these existing groups are evaluating how their current efforts overlap with water quality improvement needs. The Upper Clark Fork Basin Commission has requested to take the lead on developing water quality improvement strategies for listed waters within its focus area; the DEQ has agreed. HB 546 included consultation roles for these groups and acknowledged that new groups might form to address water quality improvement needs.

Other state agencies

- As part of the state activities required under the federal Clean Water Action Plan, state and federal agencies are evaluating where their program goals overlap, and creating a unified set of priorities that may play a role in how additional federal funds are distributed.

Federal land management agencies

- Federal agencies are also participating in the Clean Water Action Plan process described above. In addition, the DEQ has met several times with the U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation and others, to determine how these agencies' programs can fulfill state water quality requirements. DEQ's outreach staff are working on a project by project basis to determine if federal projects and plans on listed streams can be summarized to qualify as TMDLs.

Legislative Environmental Quality Council (EQC):

- The Legislature's EQC (Water Policy Subcommittee) conducted oversight of HB 546 implementation during the 1997-98 Interim. This included presentations from staff, public comment, updates from the STAG, a TMDL implementation tour in the Dillon area, and discussions of various policy considerations related to HB 546 implementation. They summarized their conclusions and recommendations in Chapter 5 of this report to the 1999 Legislature. The EQC will likely continue to conduct legislative oversight of HB 546 implementation during the 1999-2000 Interim, including follow-up on topics and questions discussed in 1997 and 1998.

General public

- Members of the public not associated with the above groups have participated in the program by attending and participating in local DEQ-sponsored meetings on the 303(d) list, attending and participating in STAG meetings in Helena, contacting DEQ staff for information on the program and the quality of waters in their area, submitting petitions to list or delist waters, and coordinating with their local Conservation District on similar matters. Before the program changes were enacted, individuals participated in legislative hearings and deliberations regarding HB 546.

Universities

- Several university faculty are discussing how they can assist with TMDL implementation. The Montana University system Water Center developed a TMDL web page and has posted a searchable on-line version of Montana's 303(d) list on their website. Extension staff are conducting water quality monitoring training, and the Montana Watercourse has expanded their "Know Your Watershed" program offerings in Montana. The Watercourse is also a primary sponsor of a new Volunteer Water Quality Monitoring Group that is developing and conducting workshops in volunteer water monitoring methods in Montana.

Montana Watershed Coordination Council (MWCC)

- The MWCC is an informal group of agency and private representatives that meet quarterly to determine how they can coordinate and assist local watershed groups and conservation districts in developing and implementing watershed-related projects and programs. Their meetings regularly include TMDL program updates from the DEQ; information provided can then be shared with MWCC members' colleagues. The MWCC has developed a web page that provides links to watershed groups in Montana, a directory of funding sources, and other information designed to encourage voluntary watershed improvements and build the capacity to get them done.

Legislature

- The 1997 Legislature debated, amended, and passed HB 546 which further directed the DEQ to monitor and assess the state's water quality and develop water quality improvement strategies (TMDLs) where

needed. They also provided $1.4 million in state money to fund their directive, and conditioned the use of federal 319 funds to also further these purposes. They also increased funding available to Conservation Districts to generally build their capacity to address resource issues at the local level. The 1999 Legislature will convene in January 1999. There may be proposed changes to the TMDL law, and there will be funding discussions regarding the TMDL program, as well as other programs that relate to their ability to assist in achieving state goals related to water quality improvement. (See also, Legislative Environmental Quality Council, above.)

District Court

- The federal district court will decide whether the federal Environmental Protection Agency (EPA) has been lax in its role of ensuring Montana developed and submitted to the EPA adequate 303(d) lists and developed TMDLs. DEQ attorneys and attorneys from other groups are participating in the lawsuit on Montana's behalf. The court may determine that the EPA should have a greater role in developing the list and/or TMDLs, or assign timelines for TMDL development.

Federal Environmental Protection Agency (EPA)

- The Region 8 office of the EPA reviews Montana's 303(d) list submittals, and reviews each TMDL submittal forwarded to them by the DEQ. They provide technical and program assistance to the state in interpreting federal guidance regarding the 303(d) list and TMDL development. EPA staff have participated in interstate TMDL efforts (e.g. the Clark Fork). The EPA is the conduit for a variety of federal funds related to water quality programs and projects. EPA attorneys are also defending the agency in the Montana-related TMDL/list lawsuit described above.

Given all the activity and attention currently being given to the 303(d) list and TMDL development, DEQ staff note that the TMDL process is an excellent opportunity for people to improve water quality and have a say about their future. Local people have unique insights into the issues surrounding water quality in their area. This local expertise is a necessity in carrying out an effective plan of action which identifies site-specific problems and targets them for water quality cleanup.

How is this work being funded?

The 1997 Legislature funded nine new water quality staff positions at the DEQ -- two data management positions, four monitoring and assessment positions (all in the Monitoring and Data Management Bureau), and three TMDL outreach positions in the Resource Protection Planning Bureau. However, the Legislature did not provide new funding for local watershed groups and conservation districts to collect data and develop and implement TMDL plans. The 1997 Legislature directed the DEQ to use a portion of nonpoint-source (319) funds to help local groups implement TMDLs, and required the remaining 319 funds be used to benefit waters on the 303(d) list.

Additional resources may be available through the following actions:

- Finding common watershed management goals and better coordinating grants from state and federal agencies to maximize effectiveness.
- Encouraging and participating in local Conservation District or watershed group sponsorship and coordination of TMDL development.
- Seeking grants from private foundations.
- Seeking in-kind services from other agencies, industries, and conservation groups.

Universities may play an important role in providing education, resources, and expertise.

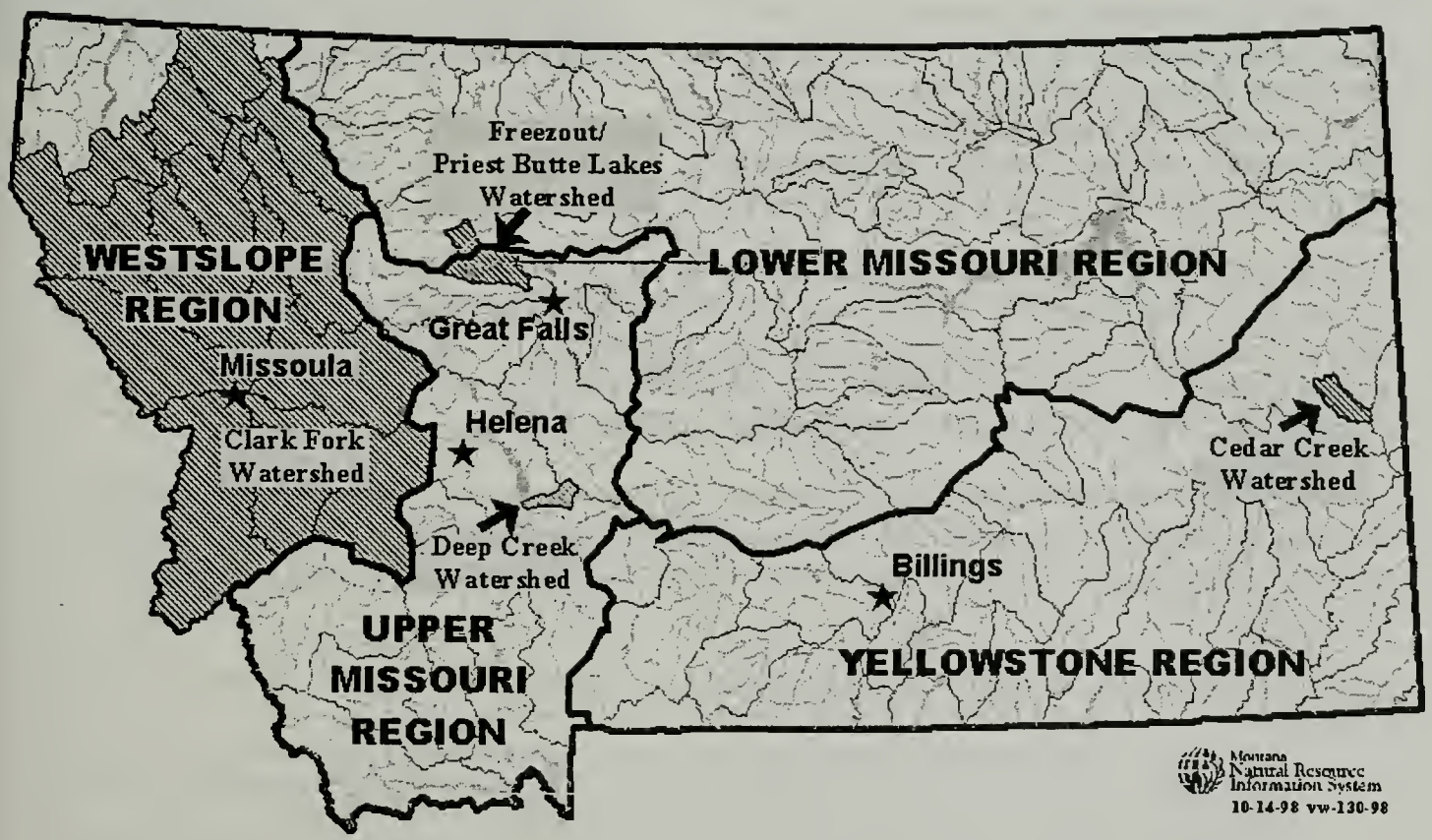
WHAT IF WE HAVE MORE QUESTIONS THAN THOSE ANSWERED HERE...?

People whose questions have not been answered above may wish to contact their local conservation district or DEQ staff directly. Also, EQC staff are presuming this writeup is a draft, from which a broader communication effort should be initiated. If you feel additional questions and answers would be helpful to a broad audience, please suggest these to DEQ or EQC staff, or ask to be a reviewer on the next round of this publication.

CHAPTER 4. FOUR EXAMPLES OF WATER QUALITY IMPROVEMENT EFFORTS IN MONTANA

This chapter provides four examples of water quality monitoring, assessment, and improvement projects in Montana. For geographic diversity, one example is provided from each of the DEQ's four TMDL regions. The examples exemplify diversity in resources as well, with one lake, one large river, one smaller river, and one intermittent/ephemeral stream. The issues vary widely, as do the scales of effort. We hope the examples are helpful in further understanding the considerations and procedures involved in Montana's revised process of addressing water quality concerns.

The locations of the four example watersheds are shown below. Their descriptions begin on the next page.



DEEP CREEK (Upper Missouri Basin)

The Deep Creek TMDL was the first water quality improvement planning effort to succeed in removing an impaired water from Montana's 303(d) list. It was initiated prior to the HB 546 revisions to DEQ's TMDL-related programs, and was initiated by concerns over declining fishery conditions. It is held up by EPA staff as a national model for how TMDLs can be prepared in areas where nonpoint source issues are the primary causes of concern.

About the Watershed...

Deep Creek drains approximately 56,000 acres (about 88 square miles) of land within Broadwater County. Major land uses in the area include timber harvest, grazing, and recreation in the National Forest portion of the watershed; and grazing, irrigated and dryland agriculture, and some residential uses in the lower reaches. A majority of land (about 55%) in the watershed is managed by the U.S. Forest Service (USFS); the remainder, and most of the lower watershed area, is privately owned. The Broadwater Conservation District shares resource management responsibility in the watershed.

Deep Creek is about 24 miles in length, and drains to the Missouri River south of Townsend, Montana. Flows in 1993 (considered a wet year) showed a low flow of about 18 cubic feet per second (cfs) and a high flow of about 150 cfs. Measurements from 1994 (considered a dry year) fluctuated between a low of almost no flow, to a high flow of about 105 cfs. Peak flows occurred in late May in 1993, and late April in 1994. However, there is no long-term flow record for Deep Creek.

The creek provides spawning and rearing habitat for rainbow and brown trout in both the Missouri River and nearby Canyon Ferry Reservoir. In addition to being an integral component of a heavily fished river system, Deep Creek is one of the few spawning streams available between Toston Dam and Canyon Ferry Reservoir.

Deep Creek is classified as a "B-1" stream, so (according to Montana's Administrative Rules (ARMs)) it should be:

> suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. (ARM 17.30.623)

The lower 15.6 miles of Deep Creek was included on the 1992 303(d) list. This segment includes the portion of stream from the National Forest boundary to the Missouri River, near Townsend. At the time of listing, concerns focussed on flow alteration, siltation, streambank modification/destablization, and other habitat alterations. State staff estimated that agricultural land uses, including range land and irrigated

crop production, were contributing to these water quality concerns. Because of these concerns, the creek was placed on the 303(d) list as fully supporting of recreation, swimming, drinking, agriculture, and industrial uses, but only "partially" supporting of aquatic life and a coldwater fishery.

Getting Started

Findings of declining trout spawning habitat and stream bank stability in Deep Creek in 1991 raised local concerns for the health of the area. According to watershed planning participants, the Deep Creek watershed had become significantly degraded over the years due to sedimentation and dewatering, much of which was from manipulation of the stream channel. Due to concerns about the fishery, the FWP initiated cooperative efforts with local landowners and the Broadwater Conservation District to enhance the fishery in Deep Creek. The effort then expanded to include upland management issues, as well as the development of the water quality improvement strategy for the creek. A partnership continues between landowners, the Broadwater Conservation District, the Montana Department of Environmental Quality (DEQ), the Montana Department of Fish, Wildlife & Parks (FWP), the federal Natural Resources Conservation Service (NRCS), other agencies, and private consultants.

Assessment

Although a high level of resource information existed for Deep Creek (including aerial photos from the 1950s), the various public and private entities gathered additional data between 1991 and 1995 to further evaluate the creek's condition. This information included new aerial photos, a stream bank inventory, water quality data, substrate cores, and information on fish and macroinvertebrate communities. The results of these assessments identified several concerns, including:

- Trout production was low, and macroinvertebrate communities were impacted.
- Aquatic life in Deep Creek was impaired by several types of habitat degradation.
- Riparian vegetation communities were degraded and dewatering was a problem.
- Bank stability was poor in areas, resulting in collapse, loss of meander, entrenchment, and high sediment transport and settling.
- Temperatures were too high for a healthy fishery, and water management may have been limiting fish migration.

Planning

Using input from various landowner and agency entities, Deep Creek became Montana's first nonpoint source Total Maximum Daily Load plan approved by the EPA in 1996. While no formal watershed organization was involved in the TMDL process, the plan was prepared by staff (a fisheries professor and a graduate research assistant) of Montana State University (MSU), in consultation with staff of the DEQ and FWP. They used documentation by various local sources, including; the Broadwater Conservation

District, irrigation companies, FWP, DEQ, MSU, the NRCS, and the USFS.

A phased approach to water quality restoration is foreseen for the Deep Creek drainage. Based on monitored responses to restoration in the watershed area, initial best estimates of pollutant loads will be refined over time. Target values rather than quantified pollutant loads serve as indicators of successful treatment. Eight water/habitat improvement targets were developed for Deep Creek:

- Primary Goal: Meet a target of 3,000 spawning female wild trout per year over the next 10 years, as observed through capturing at weir,
- Increase the ratio of flow to sediment load (total suspended solids) by a specific amount in 4 out of 5 years,
- Find no significant difference in daily spring run-off sediment load between Deep Creek and the reference stream in 4 out of 5 years,
- Reduce by half the percentage of eroding banks over 10 years,
- Increase channel length by re-establishing 2,275 lineal feet of channel,
- Decrease substrate fines from 50% to 30% in spawning riffles over the next 5 years,
- Alter water temperature extremes as such that 73 F is not exceeded for more than 10 days per year, in one out of 5 years, and
- Address dewatering so that not less than 9 cfs occurs in the lower and upper reaches and not less than 3 cfs occurs in the middle reach within 5 years.

The plan targeted what the assessment determined were the most important sources of pollution: flow regulation and modification, irrigated crop production, natural sources, range land, removal of riparian vegetation, and stream bank modification and destabilization. Pollutant sources and targets were identified by reach along Deep Creek.

Implementation

The plan is being implemented voluntarily, and it includes identification of various sources of time and money (e.g. individual landowners, the Broadwater County Conservation District, the Broadwater-Missouri Water Users Association, the Broadwater Stream and Lake Committee, the Montana Ditch Co., the MSU Extension Service, the Townsend School District, the DEQ, Department of Natural Resources and Conservation, the FWP, the USDA Farm Services Agency, the NRCS, and the USFS).

Restoration activities have included both the removal of a fish barrier at the Montana Ditch crossing, and stabilization of over 14,000 feet of stream bank using sloping, revetments, revegetation, and riparian fencing. These activities were funded by Toston Dam Mitigation Funds, 319 grants, FWP resources, and a private landowner. Voluntary cooperation between ditch companies and individual water users is a critical component of this water quality and fish habitat improvement effort, resulting in improved flow conditions in the watershed.

In 1997, high flows damaged some of the work which had been started in 1996. The restored banks had not completely stabilized, so some of the previous restoration work had to be repaired or replaced.

Currently, the NRCS is assisting landowners with management plans to complement the instream work that has been done.

Monitoring

The water quality improvement plan (TMDL) submitted to the EPA included a variety of monitoring tools, focussing on riparian condition, water quality, channel morphology, substrate characteristics, and aquatic biota. They were:

- Riparian condition is monitored by sending out questionnaires to landowners addressing conditions and changes in fish habitat parameters, stream banks, and riparian conditions. The results are used to assess the **effects of land management on riparian and stream conditions** and trouble shoot problems such as excessive soil erosion.
- Photo points are used to observe **riparian changes** over the years at specific reference points.
- Temperature measurements on each reach of Deep Creek help assess **temperature fluctuations** through the year and drainage.
- Chemistry tests and Wolman pebble counts are used to monitor **water quality**.
- **Channel morphology** (i.e. structure and stability) is monitored by taking transect observations. Substrate characteristics are observed through substrate cores and photo transects.
- **Fishery conditions** are monitored by trapping, shocking, and using artificial redds of the trout population, as well as continuing bioassessment protocol (i.e. bug samples) to assess changes in habitat conditions and benthic macroinvertebrate communities compared to 1991 and 1992 baseline data.

Monitoring efforts were to be applied yearly for 5 to 10 years following treatment. Agency staff were to provide aerial photos, water quality data, substrate cores and biological surveys; landowners were directly involved through questionnaires and surveys.

The monitoring strategy is currently being refined. Many of the same parameters are included in the proposed revision, including number of fish, amount of sediment, total suspended solids, number and type of macroinvertebrates, temperature, feet of eroding banks, channel cross-sections, pebble counts, flow, and turbidity. The strategy was implemented in 1997, continued through 1998, and is scheduled to continue through 2003, although funding past 1999 has not yet been secured. Preliminary results are described below.

Progress Towards Targets

High flood flows in 1997 set the Deep Creek project back somewhat by damaging some of the restoration projects recently installed in the watershed. Also, only two years of monitoring information is currently available, one year of which represented an unusually high flow year. However, progress is evident, primarily related to physical and hydrological aspects of the creek.

Many project elements continue to be designed and implemented, including stream bank and channel improvements, fencing, adding lineal feet to the creek by redirecting flow into inactive portions of the

channel or into new meanders constructed in the floodplain, replacing irrigation structures, altering canal maintenance practices, hiring a watershed coordinator, supplementing creek flow with irrigation water, and replacing portions of the canal with more efficient water transport structures. Bank and channel work was designed to demonstrate cost-effective stabilization techniques.

About 600 lineal feet of new channel had been added by late 1998. Mid-September 1997 lower creek flows measured about 25 cfs, half again higher than the lowest flow measured in 1993 (considered a wet year), and considerably better than near-dry conditions occurring in some years. These increased late-season flows should help reduce temperature extremes and improve trout fry production. Over 62% of the eroding bank area identified in pre-project inventories has been stabilized.

With only two seasons of data, it is tempting (but premature) to look for trends, though some preliminary numbers are of interest. Early monitoring information shows that, compared to the pre-project condition of Deep Creek: fine sediments increased in 1997 and decreased in 1998; average particle size decreased slightly; and migrant trout numbers remained constant in 1997 and decreased in 1998.

Presuming continued funding of monitoring efforts, project participants look forward to seeing measurable and tangible results from their extensive and creative efforts in the Deep Creek watershed.

FREEZOUT AND PRIEST BUTTE LAKES (LOWER MISSOURI BASIN)

The water quality improvement effort for Freezout and Priest Butte Lakes is unique in that the area is a state wildlife management area where concerns for water quality are as important as those for waterfowl habitat. A primary management goal of Montana Fish, Wildlife and Parks (FWP) is to maintain the water quality of the Teton River. The water quality improvement effort has been underway for 15 years.

About the Watershed...

Approximately 79,000 acres of land form a closed basin containing Freezout and Priest Butte Lakes. These lands are located in southern Teton County which contains some of the most productive agricultural lands in Montana. Land uses in the Freezout watershed include irrigated and dryland agriculture, wildlife habitat on the Freezout Lake Wildlife Management Area, recreation such as hunting and bird watching, the community of Fairfield, a rural airport, an extensive irrigation project, and livestock grazing. State Highway 89 runs just east of Freezout Lake and just west of Priest Butte Lake. About 80% of the watershed is privately owned; the remainder is federal and state lands.

The wildlife management area's 12,000 acres of water, fields, and wetlands may host up to a million birds at one time including geese, swans, ducks, gulls, loons, cranes, and shorebirds. Raptors, upland game birds, and migrating songbirds also use the area. Big game and other wildlife inhabit the area. The area is open for public use throughout the year.

Prior to construction of the Greenfields Irrigation Project, Freezout Lake was an alkali lake bed that dried up on a regular basis. Historical records document buffalo wallowing in the lake 100 years ago and include three different (each colorful!) accounts of how the area got its name. As irrigated agriculture expanded upgradient to the east in the early 1900s, irrigation return flows and drainage from the Fairfield bench increased flows into the closed basin to the point of flooding nearby roads, railroad tracks, and farmland. Water levels fluctuated dramatically and officials talked of draining the basin. When migrating waterfowl were drawn to the lake, Fish and Game (now FWP) officials, the federal Bureau of Reclamation (BuRec) and federal Bureau of Land Management (BLM) agreed to cooperate on the control of water levels through the development of a waterfowl management area.

Land acquisition began in 1953, and an outlet ditch from Freezout Lake to Priest Lake was soon constructed. From Priest Lake, a series of underground culverts and pipes released water into the Teton River. Workers constructed ponds, interconnected by dikes with water control structures, and containing nesting and loafing islands. They planted tall grasses and legumes for dense nesting cover and shelterbelts to provide cover for upland game birds. The effort was good from a wildlife habitat and flood

management perspective, but created other challenges from a water quality perspective. Low quality irrigation drain water and inadequate amounts of fresh water made it difficult to maintain water quality to meet appropriate standards in the lakes and in the water released to the Teton River.

Freezout and Priest Butte lakes are classified as "B-1" waters. This means they should be:

> suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. (ARM 17.30.623)

The latest information supporting the listing of Freezout and Priest Butte lakes on the 303(d) list was collected in 1994 when a follow up inspection was conducted by the DEQ to assure compliance with the load allocation (pollutant limit) that had been assigned to FWP in 1984. Water quality concerns for Freezout include the occurrence of metals, salinity, total dissolved solids, and chlorides. Concerns related to Priest Butte were the same, as well as organic enrichment and insufficient dissolved oxygen. Agricultural land uses, including both irrigated and dryland crop production, were thought to be contributing to these water quality concerns.

For these reasons, Freezout Lake was placed on the 303(d) list as fully supporting of industrial uses, partially supporting of aquatic life, and nonsupporting of drinking, agriculture, and a coldwater fishery. Priest Butte Lake was placed on the list as fully supporting of industrial uses, aquatic life, agriculture, and drinking, but nonsupporting of swimming and a cold-water fishery (see Appendix C). FWP's fisheries biologists doubt that the shallow Freezout Lake will ever support a cold water fishery. This indicates that the classification of the lake should be reevaluated by the DEQ.

Getting Started

Since the development of agriculture in the Fairfield Bench area to the east, Freezout Lake, with no outlet, became a natural sump for elevated ground water flow and flows from irrigation system drains. The Greenfields Irrigation system uses Sun River water which eventually drains into the Teton River via Freezout and Priest Butte Lakes. When the drain was constructed from Priest Butte Lake to the Teton River, highly saline waters were added to the river causing concerns from irrigators using the water in the Teton River. FWP staff, landowners, and irrigators contacted the Department of Health and Environmental Sciences (now DEQ) and asked the department to protect the designated uses of the water in the Teton.

Assessment

State staff assessed the problem and worked with wildlife area managers to develop a management plan. Although not called a TMDL then, the plan stated that the discharge must not increase the salinity level of the Teton above 1,000 micromhos per centimeter at a temperature of 25 degrees centigrade.

This agreement alleviated some concern, but did not address other water quality issues. The City of Fairfield (which discharges wastewater to Freezout Lake), the FWP, and the Greenfields Irrigation District have coordinated with the DEQ, the U.S. Geological Survey (USGS) and the Montana Department of

Agriculture (MDA) to further address water quality pollutants going into and coming out of the basin.

The city's wastewater discharge permit is up for renewal. The discharge to the lake is both beneficial as well as potentially harmful. The discharge adds much needed fresh water to reduce the salinity of the lake water, but, as with any wastewater discharge, the nutrient loading must be authorized by a general discharge permit.

The FWP has just completed further water management assessment and planning. The BLM has adopted grazing allotment management plans for four grazing allotments west of the lakes. A 160-acre allotment is grazed year-long and is authorized 49 animal unit months (AUMs). The other three allotments totaling 200 acres are grazed from June 1st to September 30th and are authorized 30 AUMs.

Planning

The City of Fairfield, DEQ, FWP, MDA, BLM, the Greenfields Irrigation District, and the Teton River Basin Resource Group are working to address water quality issues in the Freezout/Priest Butte watershed, and the resulting discharge to the Teton system. The goals are to:

- improve the quality and decrease the adverse impact of the discharge water from Freezout/Priest Butte Lakes to the Teton River;
- minimize adverse impacts to the biological communities of Freezout Lake from urban wastewater; and
- meet state water quality standards for selenium, salinity, and biological oxygen demand (BOD).

The targets which have been adopted to address issues include:

- maintain levels of total dissolved solids in the Teton River at the State Highway 221 bridge at less than 700 mg/l (1,000 micromhos per centimeter at a temperature of 25 degrees Centigrade);
- replace 13 water control structures and remove sediment in the Priest Butte Lake discharge canal;
- acquire water allotment for 787 acres of irrigated agricultural land in Freezout Basin as a fresh water source;
- repair and maintain the discharge valve from the wastewater lagoon to regulate discharge to meet permit limits for biological oxygen demand (BOD) and total suspended solids (TSS).

DEQ staff summarized the research and monitoring results and the planning documents listing the process, targets, and monitoring agreements described above, and submitted the summary to the EPA as a water quality improvement strategy (i.e. TMDL) for removal of Freezout and Priest Butte Lakes from the 303(d) list. The TMDL is phased and may be altered by new waste load allocations when Fairfield's permit is renewed and by new load allocations as the Teton River Basin Resource Group develops TMDLs for the larger Teton Watershed. A response from the EPA was expected in November 1998.

Implementation

The implementation of FWP's new management plan further improves water quality and quantity management in the Freezout/Priest Butte system. The city's discharge permit is up for renewal, which provides an opportunity to evaluate the system in the context of the other watershed activities. The BLM manages grazing allotments to minimize impacts to the wildlife management area. And the irrigation district uses water conservation measures which improve water quality. Each entity is more aware of and is looking at further options to minimize contributions of contaminants to the Freezout/Priest Butte system.

With the newest round of improvements to assure water quality, the FWP spent $435,000. The Department of Interior's National Irrigation Water Quality Program contributed $300,000, and the Greenfields Irrigation District provided cost share money. The DEQ has provided about $373,000 in grant monies for projects that contribute to improved water quality in the basin.

The recommendations in the studies and plans either have already been implemented or additional funding is being sought for implementation. FWP staff are altering the flow regime between ponds to manage salinity through the Freezout system. They are also conducting maintenance on the pipeline from Priest Butte Lake and are reconfiguring the headgate.

The USGS has identified which drains are contributing the largest amount of pollutants downgradient, and this information allows the FWP to monitor and manage the water to reduce pollutant levels. A series of 319 grants have been secured to integrate the objectives of this TMDL into the broader scope of issues being considered by the Teton River Basin Resource Group.

Monitoring

FWP staff conduct most of the monitoring in the system. They measure flow and salinity at least twice a week, both above and below the outlet to the Teton River. They also monitor water quantity and quality between ponds. The wastewater treatment operator for Fairfield monitors the effluent for BOD and nutrient levels. DEQ staff oversee the monitoring effort and assure compliance.

Progress Toward Targets...

The coordination between entities has been successful in reducing water quality problems in the Freezout/Priest Butte system, as well as the related inflows to the Teton system. The FWP reports monitoring results to the citizens of Teton and Chouteau Counties at the annual meetings of the Teton River Basin Resource Group. FWP staff note that the most effective way to further improve the quality of water discharged to the Teton is by further improving the quality and quantity of water flowing into the Freezout system.

CEDAR CREEK (YELLOWSTONE BASIN)

Cedar Creek illustrates a water quality improvement effort in its early stages, in eastern Montana, that may involve a revision to how the stream is listed on the 303(d) list. The area and the landowner and agency efforts to address water quality issues are described below.

About the Watershed...

Cedar Creek drains approximately 135,000 acres of land within Dawson, Prairie, and Wibaux Counties in eastern Montana. Major land uses in the watershed include oil production, agriculture (grazing), and recreational uses (mostly off-road vehicle (ORV) riding). About half of the watershed is private land; 46% is public land administered by the Bureau of Land Management (BLM); and the remainder is state land administered by the DNRC. The Dawson, Prairie, and Wibaux Conservation Districts share resource management responsibilities within the watershed.

Cedar Creek is slightly over 38 miles in length. It flows into the Yellowstone River, near Glendive. Flows in the upper third of the creek are ephemeral (associated only with storm events); the remainder are intermittent (i.e. year-round pools and springs, but some areas with no surface flow during dry months of a typical year). Highly erosive shales make up most of the valley floor and uplands. Cedar Creek is classified as a "C-3" stream, so (according to Montana's Administrative Rules (ARMs)) it should be:

> suitable for bathing, swimming and recreation, growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers. The quality of this water is naturally marginal for drinking, culinary and food processing purposes, agriculture and industrial water supply. (ARM 17.30.629)

The decision to place Cedar Creek on the 303(d) list was made in 1989, based upon water quality samples taken in the mid-1970's, and confirmed by the 1994 annual BLM water quality report. At that time, concerns focussed on the level of occurrence of inorganics, salinity, total dissolved solids, chlorides, and suspended solids. The land uses thought to be contributing to these water quality concerns were agriculture and grazing, along with natural sources. Because of these concerns, the creek was placed on the 303(d) list as fully supporting of recreation, swimming, and industrial use, but only partially supporting of aquatic life, a warm water fishery, agriculture, and drinking water supply (see Appendix C).

Getting Started

Portions of the Cedar Creek watershed have been the subject of local planning efforts to address a variety of landowner and agency concerns (e.g. oil field roads, ORV use, grazing distribution, juniper encroachment, weeds, stockwater developments, etc.) for several years. Recently, due to local concern about Cedar Creek being "on the list," representatives of the local conservation districts began to discuss the listing, what was necessary to remove the creek from the impaired waters list, and other resource concerns. They contacted the DEQ, obtained information on the reasons for the original listing, and discussed whether they should embark again on a watershed planning effort. There was no agreement on whether to start a large-scale watershed planning effort, but they agreed to request that NRCS and DEQ staff reassess the quality of Cedar Creek. They believed that some impairments were entirely natural, and that overall water quality and stream habitat had been improving.

Assessment

In response to the districts' request, DEQ and NRCS staff formed an assessment team, which included District supervisors, landowners, and representatives of the Extension Service, NRCS, BLM, and DNRC. The team agreed to reassess Cedar Creek, with the understanding that a broad cross-section of landowners would participate in the process and provide access to the stream corridor. In May 1998, the team met to discuss land uses in the watershed and what factors might be influencing the water quality of Cedar Creek. They also asked if there was information related to other resources they would like gathered while the assessment teams were in the field.

Based upon the information provided, the team developed an Assessment Plan, intended to allow sufficient information to be gathered, and of sufficient quality, that the DEQ could reevaluate whether (and, if so, how) Cedar Creek should be included on the 303(d) list. Because local landowners had requested information on weed distribution, this was also incorporated into the Assessment Plan.

DEQ and NRCS staff provided assessment training for about 20 people who agreed to participate in the assessment. The training covered the topics of stream processes, erosion, biology, and chemical and physical parameter sampling methods. The group divided into 3 teams, each assigned to review approximately 10 miles of stream, using the techniques they had learned, and led by one of the agency water quality specialists. Before going to their stream reach, the 3 groups practiced sampling and assessment skills together at one site.

In their assessment, the teams took water samples, evaluated width-depth ratios and riparian conditions, took photos of a range of stream conditions, noted the distribution of noxious weeds, and recorded their actions and observations on maps and forms. Landowners not participating in the full assessment joined the teams when the teams were on those owners' lands. After the data collection, the teams gathered to discuss what they had done and seen. The group agreed the teams would write a summary of their general observations of the condition of the stream and uplands, and would meet again to view the slides and review the lab results of their water sampling. The training, assessment, and decisions on next steps were completed in a day.

When the teams met again, they came to the following conclusions:

- the upper parts of the watershed (approximately 25 miles of upper Cedar Creek) are in relatively good

condition, given the geology, soils, and climate of the area;

- there were no water quality parameters that varied significantly from what would be expected in the area (e.g. suspended solids, inorganics, salinity, and chlorides appeared to be natural in origin); and
- the lower 12-13 miles (mostly through BLM land) appeared unable to fully support its potential aquatic life (i.e. impacts to riparian vegetation conditions and channel stability), likely related to livestock grazing practices with some contribution of sediment from oil field roads and drainage crossings.

In addition to the general conclusions, NRCS and DEQ staff met to determine how the results of the assessment might fit with the 303(d) listing and TMDL process. They concluded that the data collected were likely sufficiently credible to be included in a revision of Cedar Creek's listing on the 303(d) list, but that some additional aquatic life samples (i.e. macroinvertebrates and/or fish) may be necessary to ensure all potential uses were fully assessed. With the additional information, they will put the results through the DEQ's use support decision making process, and likely conclude that: the upper 25 miles of Cedar Creek should come off the 303(d) list; that the inorganics, salinity, solids, etc. should be eliminated as "causes" of impairment for the entire length of stream; and that the lower 12-13 miles needs to be retained on the list, with "habitat alteration" as an area that needs an improvement strategy for the creek to be completely delisted.

Interestingly, DEQ staff, in reviewing additional information on Cedar Creek, found that a railroad accident in the 1980s had discharged lead and other metals into the lower channel. They have offered to re-sample creek sediments to see if any residues remain in the channel. If local participants approve a return visit to the creek, DEQ staff expect to collect the additional information and complete their assessment (and resulting recommended changes to Cedar Creek's 303(d) list status) by January 1999.

Planning

As noted above, if the local decisionmakers determine they wish to proceed no further with the DEQ listing/TMDL process, the information for Cedar Creek on the department's 303(d) list would likely show that 12-13 miles of the creek as partially supporting of aquatic life, with habitat alteration as the probable cause. It is likely grazing would be shown as the probable source of the impairment. The group would have been successful in eliminating much of the stream from the list, and the number of parameters of concern would be reduced.

If local decisionmakers wanted to completely remove the water from the list, they could continue to work with agency resource staff to hone in on the sources of the problems, and (if not from natural causes), to develop some options for how to address them. This might involve discussions with a fish biologist and others to determine what changes would be necessary to fully support aquatic life and warm water fishery uses (at the mouth of Cedar Creek), then setting some quantitative goals on how to measure achievement of that. This combined with their choice of a feasible strategy on how to reach the goals (i.e. "implementation"), and how to check to see if they have (i.e. "monitoring"), plus some documentation, could serve as a TMDL. Once approved by the EPA, the creek could be removed from the list.

Implementation

The Cedar Creek group has not yet reached this phase of the TMDL process, nor have they yet stated they wish to. However, if they developed a strategy to address the habitat issues on the lower 12-13 miles of the creek, this phase would be the implementation of that strategy, possibly through grant funding for landowners and managers to potentially alter nearby grazing practices or apply other agreed-upon BMPs. There are several cost-share, grant, and loan programs available to help offset costs of these activities.

Some current resource management efforts may contribute to improvement in stream conditions as local decisionmakers decide their preferences for how Cedar Creek is shown on the 303(d) list. For example, in 1996, BLM and its grazing permittees began a three-year range improvement program, including fencing, off-stream water development, a five-pasture deferred rotation grazing management plan, and a prescribed fire management plan to address juniper encroachment and improve overall health of riparian and upland rangelands.

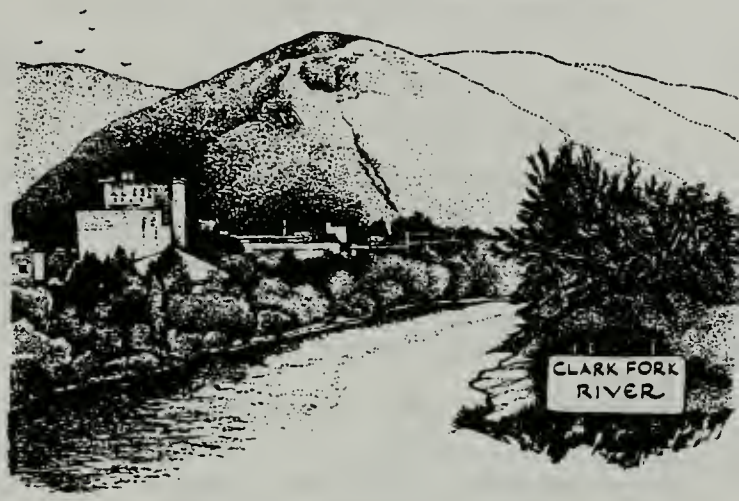
Monitoring

After implementing actions local decision-makers identify to address habitat concerns, they would implement the monitoring component of their strategy, to see that the projects and changes they came up with are really addressing the problems. Activities might include: taking photos from established photo points at a set time of the year; doing an annual set of cross-section measurements (to see if the overly wide and shallow channel conditions are changing); and/or sampling stream life or plant growth. It may be that such activities would be of interest to local community or school groups, the involvement of which could be incorporated into the overall water quality improvement strategy for Cedar Creek.

Presuming the selected actions were appropriate, properly implemented, the monitoring done correctly, and any subsequent land use changes are at least as protective as those in place at the time of the assessment, the results over time should show a gradual correction of the water quality concerns. This should result, over time, in full support of aquatic life in Cedar Creek, thereby protecting this small watershed's contribution to the health of the Yellowstone River system.

UPPER CLARK FORK (WEST SLOPE)

The Clark Fork Voluntary Nutrient Reduction Program (VNRP) is one of Montana's more recent TMDL submittals to the EPA. It involves only one of several parameters (i.e. nutrients) by which the Clark Fork is listed as impaired on Montana's 303(d) list, however, the scale of the effort and area covered is huge. Data collection and analysis was intensive and the planning complex. The entities involved, voluntarily, have pledged to invest significant resources in the reduction of nutrient loading to one of Montana's largest rivers.



About the Watershed...

Montana's portion of the Clark Fork River drains over 14 million acres (22,000 square miles) in Montana. An additional 4,000 square miles of land in Idaho and Washington drain to the Clark Fork beyond the Montana state line and to Lake Pend Oreille. All or portions of twelve Montana counties lie within the watershed, including Silver Bow, Deer Lodge, Lewis and Clark, Granite, Powell, Missoula, Ravalli, Lake, Flathead, Lincoln, Mineral, and Sanders Counties.

About 30 percent of the land in the watershed is used for forestry and 35 percent for grazing. About 15 percent of the land area is urbanized, 10 percent is in mining use, and the remaining 10 percent of the watershed is evenly divided between pasture and croplands. About 30 percent of the watershed is private land. Of the remainder, 60 percent is administered by federal agencies, and 5 percent by the State of Montana and counties, and 5 percent is tribal land. Conservation Districts sharing resource management responsibility in the watershed include Mile High, Deer Lodge Valley, Lewis and Clark, Granite, North Powell, Missoula, Bitterroot, Lake, Flathead, Lincoln, Mineral, East Sanders, and Green Mountain Conservation Districts.

Approximately 340 miles (85 percent) of the Clark Fork River lie in Montana. After crossing the state line, the river flows another 10 miles through Idaho before its terminus at Lake Pend Oreille in northern Idaho. Annual flows just above Missoula have averaged about 3,000 cfs over the last 60+ years, with flows rarely dipping below 1,000 cfs. Annual flows downstream of Noxon have averaged about 20,000 cfs over the last 30+ years, with flows at this location rarely less than 7,600 cfs. Major Montana tributaries to the Clark Fork include the Blackfoot, Bitterroot, and Flathead Rivers. Dams have been constructed on the river at Milltown (upstream of Missoula) and Noxon (near the Montana state line).

The mainstem Clark Fork in Montana is classified as a "B-1" stream for most of its length, so (according to Montana's Administrative Rules (ARMs)) it should be:

> suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and

associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. (ARM 17.30.623)

Because of effects of metals contamination from historic mine tailings disposal, the portion of the mainstem between Warm Springs Creek and Cottonwood Creek (near Deer Lodge) is classified as C-2; the portion from there to the Little Blackfoot is classified as C-1. Neither of the C classifications include any type of drinking water use, and C-2 reflects the expected support of only a marginal salmonid fishery. In contrast, some tributaries and lakes in the watershed are classified as "A-Closed" or "A-1," due to their contributing to nearby drinking water supplies.

Information on the 303(d) list for the segments of the Clark Fork that are considered impaired or threatened is shown below (see also Appendix C):

Segment	Uses fully supported	Uses partially supported	Uses threatened	Parameters of Concern	Land uses considered to be contributing to problems
From Warm Springs Creek to Cottonwood Creek (17 miles)	agriculture, industry	recreation, coldwater fishery, swimming, aquatic life	none noted	flow alteration, metals, noxious aquatic plants, nutrients, organic enrichment, other habitat alterations, suspended solids	agriculture, industry, municipal, resource extraction
From Cottonwood Creek to the Little Blackfoot (12 miles)	agriculture, industry	(same as above)	none noted	(same as above)	agriculture, municipal, resource extraction
From the Little Blackfoot to Rock Creek (59 miles)	drinking (w/ treatment), agriculture, industry	(same as above)	none noted	(same as above, except siltation, instead of suspended solids)	(same as above, plus natural sources)
From Rock Creek to the Blackfoot River (17 miles)	all		cold water fishery	metals nutrients, other habitat alterations	agriculture, resource extraction
From the Blackfoot to Rattlesnake Creek (7 miles)	drinking (w/ treatment), agric., ind.	aquatic life, cold water fishery	none noted	metals, siltation, suspended solids	dam construction, resource extraction
From Fish Creek to the Flathead River (62 miles)	all		cold water fishery	metals	dam construction, resource extraction
From the Flathead River to the Montana state line (98 miles)	drinking (w/ treatment), recreation, swimming, ag., ind.	aquatic life, cold-water fishery	none noted	flow alteration, other habitat alterations, thermal modifications	dam construction, flow regulation/ modification

Although the above information lists a variety of water quality concerns, the effort described below focuses on nutrients. As noted, portions of the Clark Fork have high nutrient concentrations and potential to grow nuisance algae. These high concentrations of nitrogen and phosphorous have resulted in heavy growths of algae both above and below Missoula. Seasonally, the death and decay of algae reduce the dissolved oxygen, water clarity, and visual appeal of the river. Reduced dissolved oxygen can impact

aquatic communities. Decaying algae has also been implicated in the production of river foam.

Getting Started

In the 1980s, citizens within the Clark Fork/Pend Oreille Basin expressed concerns about increased algae and aquatic weeds in stretches of the Clark Fork River and Pend Oreille Lake. The algae is a result of increased nutrient loading, specifically phosphorous and nitrogen, from a variety of sources.

In response to water quality concerns expressed by citizens within the basin, the U.S. Congress added a 1987 amendment (section 525) to the federal Clean Water Act, which directed the EPA to conduct a comprehensive water quality study across the three-state Clark Fork watershed (including parts of Montana, Washington and Idaho). A steering committee, comprised of staff of two EPA regions and the state water quality agencies, completed the study and a watershed management plan. The first priority in the management plan was to create a Tri-State Council to carry out the various action items in the plan. The Council first met in October of 1993.

Assessment

From 1988 to 1991, a monitoring program was implemented to identify and rank the sources of phosphorous and nitrogen in the Clark Fork River. This study determined that:

- Approximately half the soluble phosphorous came from wastewater discharges, and the remainder from tributary inflows.
- Approximately 3/4 of the soluble nitrogen came from tributaries, and the remaining 1/4 from wastewater.
- Of the wastewater discharges (point sources), the majority of the nutrients came from four sources (three municipal wastewater treatment plants, and a paper mill, all in Montana). These sources also contributed the largest share of nutrients to reaches where, and during the times of year when, algae and related problems are most prevalent.
- In general, summer time nutrient loading from nonpoint sources is significant, but less than contributions from point sources.

Planning

In February 1994, the Tri-State Implementation Council established a Nutrient Target subcommittee to achieve consensus on instream nutrient targets for the Clark Fork River and to develop a basin-wide nutrient source reduction program to meet those targets. Subcommittee representation included the municipalities whose treatment plants were major contributors, the pulp mill, university staff, a conservation group, county health department staff from the largest urban area, and the Montana DEQ. Staff of the U.S. EPA also contributed to the development of the VNRP.

Driven by the TMDL requirements of Section 303(d) of the federal Clean Water Act and the immediate need to develop a specific plan of action for reducing nutrient loading, the subcommittee wrestled with the controversial questions and complex issues associated with the reduction of nutrient loading. Over the months, members built a foundation for open dialogue and development of trust as they worked to resolve

the issues and concerns. Guided by the Council's April 1995 decision to take a voluntary approach rather than a mandatory, permit-oriented approach to the reduction strategy, the subcommittee tackled its task of developing a specific plan of action, the Clark Fork River Voluntary Nutrient Reduction Program (VNRP). The VNRP was signed in August 1998, submitted to the EPA, and approved by the EPA in October 1998.

The partners to the VNRP agreed to the following:

1. The river can be unpredictable, so the group is using its best judgement to address uncertainties through a **phased approach.**

2. The VNRP instream **targets** for the Clark River mainstem are:

   a. 300 mg/l total nitrogen
   b. 39 mg/l total phosphorus downstream of Missoula's Reserve Street bridge
   c. 20 mg/l total phosphorus upstream of Missoula's Reserve Street bridge
   d. 100 mg/sq.meter (summer mean) or 150 mg/sq.meter (peak) chlorophyll a, at any site, for the entire Clark Fork River area of the VNRP.

3. The focus will be on **algal densities** and it will be important to monitor for any changes in total and soluble nutrient concentrations in the river.

4. Each of the four significant point sources is **committed to**:

   - attaining the instream targets for summertime discharges (defined as June 21st-September 21st),
   - implementing specific measures at each site,
   - participating in the on-going monitoring evaluation process, and
   - developing new alternatives should VNRP measures not meet expectations.

5. Because the group does not want to lose any ground that may be gained through improvements at the four key point source sites, an approach will be employed that **simultaneously addresses** other point sources, nonpoint sources, and growth-related issues that impact water quality.

6. Missoula city and county agencies are committed to carrying out a strategy to control **septic system and other nutrient source impacts** in the Missoula area.

7. Commitment and involvement in the VNRP by other point and nonpoint sources will be attained through the efforts of a **VNRP Coordinator** employed by the Council.

8. The VNRP's acceptable loads are based on a **30-day/10-year low flow average**, often abbreviated "30Q10". This low flow is the lowest 30 day average observed in one summer out of 10 over a period for which stream flow has been recorded at a site.

9. The **margin of safety** is provided by the use of a conservative flow estimate based on the 30-day, 10-year low flow average, and the use of nutrient targets that are more conservative than those recommended by third party review.

10. The VNRP is a **dynamic and flexible** approach; changes and adjustments can be made as needed and agreed upon by the members.

11. In keeping with a watershed approach, **Idaho should be equally committed** to nutrient control measures in the Pend Oreille basin to ensure downstream water quality benefits from the Montana VNRP.

12. The VNRP is a **voluntary** program that provides four key dischargers with an opportunity to develop and implement their own plan to reduce nutrient discharges and improve instream water quality, as opposed to a DEQ-administered mandatory program of permit-based effluent reductions.

13. The VNRP sets **ten years** from the date of signature by the parties to the VNRP to achieve instream nutrient and algal targets with an interim evaluation at least every three years.

14. All members are **jointly committed** to carrying out the VNRP; the VNRP can only be successful if all parties fulfill their commitments.

15. The members are committed to continued coordination and administration of the VNRP through the **Council**.

(Additional information on the Clark Fork VNRP is included in Chapter 5 of this report.)

Implementation

The 10-year VNRP calls for site-specific measures to be taken by each of the four key point source dischargers, and for significant reductions in nonpoint source pollution, to meet specific instream nutrient and algal density targets. These measures are too numerous to list here; they can be reviewed at pp.3-6 of the VNRP (available from the DEQ or from the Tri-State Implementation Council office in Sandpoint, Idaho). Based on river study results, literature review, third party reviews, and citizen concerns about nuisance algae, the subcommittee believes the targets and reduction measures are reasonable. The targets, discharger actions, and river water quality will all be evaluated at three-year intervals during program implementation. (Algal density in the river will be evaluated annually.) Revisions to the program may be made as needed and agreed upon by subcommittee members.

Now that the TMDL has received EPA approval, the Council's nutrient target subcommittee will hit the ground running. They have already obtained grant monies to hire a part-time VNRP coordinator for two years. This person will assist the parties to the VNRP with implementation of their reduction measures and for expanding the existing VNRP partnership to build support and involvement of other important point and nonpoint stakeholders.

The parties to the VNRP have agreed to continue to evaluate other issues concerning nutrient loading in the Clark Fork Basin, including;

- development of strategies to reduce nutrient loading basinwide, by point and nonpoint sources;
- refinement or development of models to predict nutrient loading; and
- development of strategies to address nutrient loading caused by future activities in the basin.

The Tri-State Council has also agreed to provide guidance and coordination to other groups working on TMDLs within the Clark Fork Basin, with the belief that their experience would be welcomed by entities just beginning the TMDL development process.

Monitoring

In 1995, the Tri-State Council's Monitoring Subcommittee contracted with a consulting firm to design a coordinated, consistent, and meaningful monitoring program for the three-state watershed. The contractor

developed monitoring alternatives for subcommittee consideration. The final monitoring plan was completed in 1997 and is being implemented beginning with the 1998 field season.

According to the monitoring plan, the mission of the Tri-State Implementation Council has been to develop a management strategy to restore and protect designated water uses within the Clark Fork/Pend Oreille Basin. The monitoring subcommittee oversees water quality monitoring efforts and makes recommendations to improve the basin-wide monitoring program.

The basin-wide monitoring program includes a sampling design to detect long-term trends in water quality and to meet monitoring objectives identified by the Tri-State Implementation Council. The program is a statistically based design, derived from analysis of about 10 years of historical data.

Eight priority water quality monitoring objectives were defined for the basin, as follows (the first three relate specifically to the Clark Fork in Montana):

- trend detection of nutrient concentrations in tributaries and mainstem of the Clark Fork River,
- assessment of trends in periphyton (nuisance algae) in the Clark Fork mainstem,
- assessment of compliance with mid-summer nutrient targets for the Clark Fork,
- estimation of nutrient loads to Lake Pend Oreille,
- assessment of trends in periphyton in the Lake Pend Oreille nearshore,
- trend analysis of Secchi disk transparency (a measure of water clarity) in Lake Pend Oreille,
- trend assessment of nutrient concentrations in the Pend Oreille River and nutrient concentrations and fecal coliform in tributaries, and
- assessment of macrophyte composition and density in the Pend Oreille River.

The objective of monitoring is to generate reliable information on water quality trends and status for watershed managers. Sampling locations and frequencies optimize information for watershed management decision-making, while minimizing monitoring costs. The three management/monitoring goals that apply to Montana, along with the parameters proposed to evaluate achievement of those goals, are described below:

Management Goal #1:	**Improve water quality**, which includes monitoring of seasonally based total phosphorus and total nitrogen concentrations, to detect significant water quality trends
Parameters to be Monitored:	total phosphorus, total nitrogen, orthophosphate, dissolved inorganic nitrogen
Management Goal Achieved when...	no trend exists, or results indicate improvement
Management Goal #2:	**Control Nuisance Algae**, which includes measurement of attached algae levels to be compared year to year to detect significant trends in algae growth; and monitoring for changes in algal species to detect trends in species composition as a result of nutrient targets
Parameters to be Monitored:	Chlorophyll *a*/ash free dry weight
Management Goal Achieved when...	slope in trend line indicates improvement
Management Goal #3:	**Achieve Instream Nutrient Targets**, which includes monitoring of total and soluble phosphorus and nitrogen to evaluate success at achieving targets
Parameters to be Monitored:	total phosphorus, total nitrogen, ortho phosphate, dissolved inorganic nitrogen
Management Goal Achieved when...	VNRP target achieved or bettered

Each goal listed above also included the statistical evaluations that would be performed, and, where relevant, the conditions under which a trend could be concluded (e.g. confidence levels, etc.). A total of 32 water quality monitoring stations were agreed to -- 15 on the Clark Fork mainstem, and the remainder on tributaries.

The monitoring plan specifies which stations would have which combination of annual sampling routines. For example, sampling at the Gold Bridge station on the Clark Fork consists of 12 samples per year of the nutrient parameters. Sampling at the Clark Fork above Missoula involves the same nutrient parameter frequency, but adds 10 algae samples to the sampling protocol. All stations are specified for nutrient parameter sampling, some at less or increased frequency. The most extensive monitoring stations add yet another parameter to the foregoing; 6 samples of nutrient levels in the summer. The VNRP includes an agreement as to who is responsible for conducting and overseeing the monitoring, as well as the compiling, analysis, and reporting of monitoring/evaluation results.

Progress Toward Targets...

According to Tri-State Council staff, the fall of 1998 was too early to discern progress toward targets, as the TMDL had just been recently approved, and most of the dischargers will not be implementing their agreed-upon measures for one, two, or three years (i.e. Deer Lodge, Butte, and the pulp mill will implement their nutrient reduction activities next summer; some reduction in the septic contributions may begin in 1999; and the City of Missoula's nutrient reduction will be implemented in 2000). There may be some discernible changes found in the 1999 field season, though more dramatic changes will likely occur after Missoula's wastewater changes are implemented.

CHAPTER 5. EQC OVERSIGHT OF HB 546 IMPLEMENTATION

In 1997, the Environmental Quality Council created a Water Policy Subcommittee to assist them in achieving their statutory goals for the 1997-1998 Interim, as well as to conduct focussed inquiry into several policy topics, including legislative oversight of HB 546 implementation. Water Policy Subcommittee members included:

Rep. Bill Tash (Subcommittee Co-Chair)
Rep. George Heavy Runner
Rep. Karl Ohs

Sen. Bea McCarthy (Subcommittee Co-Chair)
Sen. Vivian Brooke
Mr. Bill Snoddy

The Council's direction was reflected in the Subcommittee's goals for the Interim, as follows:

- **Plan for, and pursue, a productive Interim, but retain flexibility to address issues as they arise.**
- **Ensure the Council has the information and products necessary to achieve its water-related statutory goals in a timely manner over the Interim.**
- **Enable Subcommittee members to better explain water quality regulation in general, and TMDL implementation specifically.**
- **Propose legislation to the Council, where appropriate, to address water-related policy issues.**

The fulfillment of the Council's general water-related statutory directives is summarized in a separate report, *Montana Water Policy, 1997-98 -- An EQC Communique to the Montana State Legislature*, available from the EQC office in Helena.

In August 1998, the EQC Co-Chairs, the sponsor of HB 546, and EQC staff met with the director and staff of the Montana Department of Environmental Quality (DEQ) to discuss how the EQC's interest and efforts over the 1997-98 Interim might assist the department in their efforts to implement HB 546. Among other discussion items, the department suggested the following six areas:

- **facilitate policy review and development;**
- **assist with public information by facilitating public involvement and serving as a liaison with local governments (especially concerning cross-jurisdictional issues);**
- **track progress of the DEQ's implementation of HB 546;**
- **provide recommendations for funding and/or program modifications;**
- **evaluate the progress in an upcoming EQC indicators document; and**
- **provide a forum to raise and address overarching and emerging issues.**

Upon consideration of the Council's interest and the department's suggestions, the Water Policy

Subcommittee concluded they wished to "carve out a unique role" for the EQC in the implementation of HB 546, and ensure the Water Policy Subcommittee coordinated with the EQC's Growth Issues Subcommittee. The Subcommittee's approach to HB 546 oversight was formalized in their Work Plan as follows:

Subcommittee Approach to HB 546 Implementation Oversight

The Water Policy Subcommittee will make HB 546 implementation oversight its top priority for the 1997-98 Interim. The Subcommittee will monitor the efforts, evaluate the implementation, and, as policy issues arise, determine how to address them. The DEQ's six-factor list of potential EQC involvement provides an additional framework to guide the Subcommittee's oversight efforts. (*EQC Water Policy Subcommittee Work Plan*, January 1998, p.4.)

EQC HB 546 OVERSIGHT PROCESS

HB 546 was passed by the Legislature and signed by the Governor on May 5, 1997. Specific Subcommittee and Council actions related to legislative oversight of HB 546 implementation during the 1997-98 Interim are described below.

Council Work Plan Development

June 1997
Helena

At the June 1997 EQC meeting in Helena, the Council developed a work plan, selecting a proactive approach to water policy oversight and the pursuit of a few specific issues, one being HB 546 (TMDL) implementation oversight. Council members concurred with Council Co-Chairs that a Water Policy Subcommittee was a good idea for the 1997-98 Interim. They also noted that another topic of interest, Best Management Practices (BMPs), was highly related to water quality, and might fit under the purview of a Water Policy Subcommittee.

EQC/DEQ Planning for HB 546 Oversight

August 1997
Helena

EQC Co-Chairs, the bill sponsor, and EQC staff met with DEQ's director and water quality staff to discuss common objectives and suggestions to make EQC oversight efficient for both agencies. The results of those discussions are included in **Appendix J**, including the six DEQ-suggested parameters noted above.

First Subcommittee Meeting

September 1997
Helena

The EQC's 1997-98 Interim Water Policy Subcommittee held an organizational meeting in September 1997 in Helena. They discussed the request from the Council that a top Subcommittee priority should be developing a strategy for Council oversight of HB 546 implementation, including means to involve the full Council in the oversight activities.

Subcommittee members concurred with the Council Co-Chairs, bill sponsor, and DEQ director and staff that the six parameters identified by DEQ were good options for EQC oversight and involvement in HB 546 implementation for the Interim. They noted that the first step in oversight would be to learn more about the policy directive of HB 546, and the role and schedule of the Statewide TMDL Advisory Group (STAG).

Water Quality/TMDL Training & Update

September 1997
Missoula

The Water Policy Subcommittee held its first full meeting of the 1997-98 Interim in Missoula on September 13, 1997. This meeting included a public and Subcommittee training session provided by EQC and DEQ staff on the basics of water quality policy and the components of the new water quality monitoring, assessment, and TMDL development directives enacted via HB 546. The Subcommittee heard about watershed-based TMDL efforts at varied scales, including: 1) examples from the western states provided by EPA's Region 8 TMDL Coordinator; 2) three smaller watershed water quality improvement efforts (Sun, Muddy, and Teton watersheds); and 3) the efforts of the Tri-State Implementation Council to reduce nutrients in the Clark Fork River.

The Subcommittee also heard a presentation on its first major policy issue -- the role of septic contributions to nitrate concentrations in the Clark Fork. The Subcommittee further refined their Work Plan at this meeting and discussed the potential for a TMDL demonstration tour in the spring. They also raised many questions that later became the focus of additional attention, including: local involvement in TMDL development, interagency coordination, criteria for revising the 303(d) list, natural impairment, tribal interests, voluntary monitoring, and DEQ's informational and involvement strategy.

Program Update/ Policy Discussion

January 1998
Helena

The Subcommittee finalized their Work Plan at their January meeting. DEQ staff presented information on program implementation, staffing, and progress of the Statewide TMDL Advisory Group (STAG) in assisting the department in developing a prioritization method for TMDL development. The Subcommittee also discussed other policy issues, including: when a water quality standard exceedence becomes an impairment (i.e. does one bad sample put a water on the 303(d) list?), needs for local implementation funds, public involvement, and emissions trading. DEQ staff provided an update on which waters had been removed from the list, and which they felt might be, given the directives of HB 546.

The Subcommittee then followed up on the septic issue discussed in Missoula, including a DEQ overview of septic regulation in general, a discussion of the other waterways on the 303(d) list with septic-related impairments, and a discussion of what opportunities might exist to address the issues raised in Missoula and elsewhere. DEQ staff invited the Subcommittee to co-sponsor an interagency coordination meeting; the Subcommittee agreed

to recommend co-sponsorship to the Council.

Interagency Coordination Meeting

March 1997
Helena

On March 4th, the EQC, DEQ, STAG, and the Montana Watershed Coordination Council (MWCC) cosponsored an interagency meeting to investigate opportunities for better coordination between agency programs related to water quality. Representatives from programs related to source water protection, native fish restoration, TMDL development, watershed planning, national forest water quality protection, federal water monitoring and analysis efforts, and other programs provided overviews of program goals and status. A facilitator then guided the group to identify areas of potential overlap, and discuss current coordination efforts in Montana (e.g. an interagency Memorandum of Understanding (MOU), and activities of the MWCC and the Montana Association of Conservation Districts). The group concluded that there appeared to be program-specific coordination opportunities, but no current widespread interest in a more formal approach to interagency coordination.

Further Updates, Policy, Products

March 12, 1998
Helena

At its March 1998 meeting, the Subcommittee's TMDL-related topics included: 1) an update on the proposed 1998 303(d) list submittal to EPA; 2) a review of the interagency coordination meeting, co-sponsored by the Council; and 3) an update on the activities and status of the Statewide TMDL Advisory Group from that group's chair. Policy issues raised previously and discussed further at this meeting included: septic issues, emissions trading, funding for local TMDL implementation, the definition of threatened, local coordination within a mandatory timeframe, funding, connections between beneficial use support and water quality standards, tribal issues, DEQ's preliminary decisionmaking on what qualifies as sufficient credible data for listing/delisting, and how the agency will be making listing/delisting decisions (i.e. beneficial use support determinations).

The Subcommittee requested that the EQC ask the Governor's Office to consult with signatories to the 1995 Interagency MOU on sustainability to determine how interagency coordination was progressing, and whether MOU renewal, or other coordination actions, were needed. Lastly, the Subcommittee decided to recommend to the Council a June TMDL demonstration field trip, with invites to be issued to Council members, STAG members, local representatives, and the general public.

Policy, Schedule, Data Levels, Report

May 7, 1998
Great Falls

At their May meeting in Great Falls, the Subcommittee continued their discussions of policy issues related to HB 546 implementation. DEQ staff, in fulfilment of their statutory mandate to develop a 10-year TMDL implementation schedule within one year of enactment, presented the result to the Subcommittee in Great Falls. They also discussed their preliminary decision model regarding what data will be accepted for listing/delisting, using three examples from streams in the Great Falls area. The Subcom-

mittee decided to produce a HB 546 oversight report and that the report should include a primer portion, as well as a discussion of policy issues and related recommendations. The Subcommittee identified and prioritized 13 TMDL-related policy issues for staff to summarize for their further consideration. They also discussed the importance of public involvement in their deliberations.

Further Decisions/ Council Update/ TMDL Field Trip

June 25, 1997 Dillon

The Council and its Subcommittees held their June meetings in Dillon. In response to the Council's request for the Subcommittee to incorporate the full Council in HB 546 oversight, the Subcommittee hosted a TMDL overview and tour of several locations in the upper Beaverhead watershed for the Council, interested STAG members, local agency representatives, and members of the public. The tour focussed on three waters on the 303(d) list, all listed for varied reasons, and all of varied sizes: 1) the mainstem Beaverhead, 2) the small Rattlesnake Creek, and 3) the moderate-sized Blacktail Deer Creek. For each waterway, DEQ staff discussed why the water was included in the 303(d) list, and what might be done to address the concerns listed. DEQ staff noted that the mainstem Beaverhead listing might be outdated, and that conditions had improved to the point that additional information might result in the water being removed from the list.

Tour participants noted they enjoyed the inclusion in the tour of local resource managers, including the manager of a major irrigation district associated with Clark Canyon Reservoir, the County Sanitarian, the FWP district fish biologist, and the manager of a large ranch operation which recently received a state stewardship award. These contributors helped illustrate how water quality, land use, and other policy issues and needs are intertwined in the upper Beaverhead valley.

Development of Policy Summaries

Summer 1998

EQC staff developed summaries of the 13 policy topics the Subcommittee had identified for summary and development of policy options. Each summary included background information on how the issue arose, and a list of what staff thought to be the relevant policy questions related to the topic. EQC staff solicited information and suggestions from experts on each topic. (**Appendix K** includes a list of these persons, including those who contributed comments.) After the time period for responding expired, staff incorporated comments, and developed a spectrum of options for each policy topic. The intent was to illustrate the breadth of potential actions to spur discussion and consideration upon review by the Subcommittee and others.

First Draft of Policy Summaries/Options

August 4, 1998 Helena

At their August 4th meeting in Helena, the Subcommittee reviewed each policy consideration, including the spectrum of options developed by staff. Subcommittee members discussed the information and options with staff and meeting attendees, and decided on some options to eliminate, some to convert to recommendations, and others to request Council input on. Because some

concern was expressed that attendees did not have a chance to review the options in advance of the meeting, changes to the writeups were noted with strikeouts and underlines and the result later sent to Subcommittee members and to meeting attendees. There was also discussion of a three-week public review period to gather further input.

Refine Policy Portion of HB 546 Report

September 4, 1998 Helena

At its September meeting, Subcommittee members, staff, and attendees discussed the policy issue summaries prepared by EQC staff, as well as policy options developed by staff for Subcommittee consideration. The Subcommittee made some decisions regarding recommendations, decided to ask for input from the full Council on some topics, and also decided to recommend for Council approval a three-week public review period for the Subcommittee's draft reports, including the HB 546 implementation oversight report.

Council Consideration of Draft Report

September 10, 1998 Helena

At the September Council meeting, the Water Policy Subcommittee presented their three draft reports (instream flow, HB 546 implementation oversight, and general water policy) to the full Council for their comment and consideration. The Council requested a summary of the HB 546 implementation options still being considered by the Subcommittee and agreed to comment on these options, and other aspects of this and the other reports, during the three-week public review period.

Three-week Comment Period on Draft

Sept./Oct. 1998

The Subcommittee issued all three of their reports for a three-week comment period between September 17th and October 8th. About 20 sets of written comments were received and forwarded to Subcommittee members, other interested Council members, and the Council Co-Chairs. (Copies of the comments received and the summary memo are available from the EQC office.)

Subcommittee Revises Per Comments

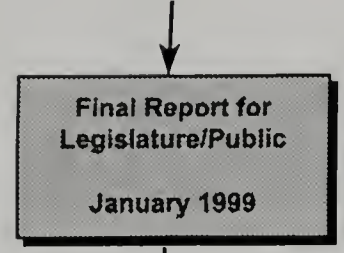
October 29, 1998 Helena

The Water Policy Subcommittee met the evening of October 29th to respond to comments on all three draft reports, but spent most of the time discussing remaining HB 546 oversight recommendations, comments, and refinements in response to the comments. All outstanding options for recommendations were either formalized as recommendations, combined with other options, or deleted to create the final list of recommendations found in this report.

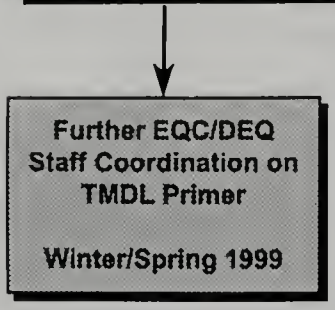
EQC Adopts Report/ Recommendations

October 30, 1998 Helena

Subcommittee Co-Chairs and staff reviewed the Water Policy draft reports and recommendations, including all sections of this oversight report. The Council discussed some of the recommendations, including that regarding an emphasis on going slowly with regard to new legislation for the program, thereby allowing the program to have some time to get up and running under consistent mandates and sideboards.



EQC staff finalized the descriptive portions of the report and made it available free of charge to those requesting copies.



Given the recommendation that the primer portion of this report receive broader review and involvement, DEQ and EQC staff have tentatively agreed to propose a committee of the Montana Watershed Coordination Council (MWCC) review and comment on the primer (chapters 2, 3, 4, and most Appendices of this report), before it is revised and produced for broad distribution. This would both be an informational opportunity for the participants and a means for broader involvement in how the program is delivered and coordinated in Montana. This proposal is planned to be discussed at the January meeting of the MWCC, and any necessary decisions will be made by staff, DEQ managers, or EQC leadership, as appropriate. Persons desiring an update on the status of the primer may contact the EQC office or DEQ TMDL staff.

GENERAL FINDINGS

General Subcommittee conclusions from their 1997-98 oversight of HB 546 implementation are as follows:

1. During the 1997-98 Interim, DEQ focussed on hiring the staff authorized for program expansion, developing preliminary guidance documents regarding the decisions they need to make regarding the 303(d) list, preparing the statutorily-required schedule for completion of TMDLs, and initiating outreach to Conservation Districts, local groups, and the public. The program is now fully staffed and getting up to speed. They have succeeded in converting some 319 and other projects into submittable TMDLs, and are working to convert more. Point-source TMDLs are continuing to be submitted to EPA via the MPDES permitting process.

2. Montana is a landmark state in how they have decided to address, through state legislation, the federal Clean Water Act requirements to monitor and assess waters and develop TMDLs. Although other states have been less willing to move forward in TMDL development, Montana is trying to address the problem and ensure the state retains primacy over water programs.

3. There is concern regarding the need to fund the program and what sources are appropriate to do so. Since the mandate is from the federal Clean Water Act, there is legislator interest in encouraging federal contributions to program implementation without disrupting traditional grant program uses of such funds.

4. The Subcommittee supports creative, voluntary solutions to water quality problems (e.g. the Deer Lodge land application of effluent to reduce nitrates in the Clark Fork River), and encourages DEQ to consider and bring to the next EQC any policy proposals to increase incentives for such creative solutions.

5. In general, the recommendations in this report are in the vein of going slowly, not rushing to make changes to the new statutes, and allowing the program to continue to develop.

6. The next EQC should continue to provide Legislative oversight of DEQ's efforts to implement the provisions of HB 546. This effort should involve coordination and communication with the Statewide TMDL Advisory Group. Oversight should include discussions, where applicable, of state policy and other issues related to a successful TMDL program.

7. The Subcommittee recommends that the "primer" (first four chapters of the Legislative Report, plus relevant appendices) be published as an independent guide. Prior to publishing it independently, however, it should be afforded broader review and subsequent refinement.

POLICY CONSIDERATIONS AND RELATED RECOMMENDATIONS

This report section summarizes 13 policy topics. These topics relate to issues raised by the Subcommittee members, persons testifying to the Subcommittee, or requests from DEQ for policy-related assistance. Each topic includes background information, a list of policy questions the Subcommittee used to frame their discussions, and the Subcommittee recommendations related to the topic. It is hoped these writeups will provide effective documentation of the reasons for the associated recommendations, as well a provide efficient starting points for further oversight activities related to these topics.

Subcommittee recommendations are interspersed through this chapter, by topic. Persons interested in seeing all findings and recommendations together should refer to Appendix A.

Effluent Trading

Background:

Overview. When DEQ staff were asked how the EQC could assist them while conducting their HB 546 implementation oversight, they suggested the Council assist in developing a policy framework for effluent trading in Montana. This topic has received renewed attention nationally as a means for dischargers in a watershed (both point-source and nonpoint source) to negotiate with each other to expand production in one area while making another area more efficient from a pollution prevention perspective. There are a variety of policy issues associated with allowing entities to trade pollution rights in a watershed and Montana has no policy framework with which to evaluate any such proposal if received.

The topic of effluent trading in Montana was discussed with Council members at two times, once in front of the full Council (January 1998), and once in front of the Water Policy Subcommittee (March 1998).

Federal Policy. The U.S. Environmental Protection Agency (EPA) is encouraging watershed-based effluent trading on a voluntary basis. The EPA issued a policy statement regarding effluent trading in watersheds in January 1996 and a *Draft Framework for Watershed-Based Trading* in May 1996. EPA's policy statement defines effluent trading as follows:

> . . . a method to attain and/or maintain water quality standards, by allowing sources of pollution to achieve pollutant reductions through substituting a cost-effective and enforceable mix of controls on other sources of discharge.

According to EPA's draft framework, the term "trading" describes any agreement between parties contributing to water quality problems on the same water body that alters the allocation of pollutant reduction responsibilities among the sources. Several types of trades are possible, as shown in the box on the next page.

Types of Effluent Trading

Point/Point source trading. A point source arranges for another point source to undertake greater than required reductions in pollutant discharge in lieu of reducing its own level of pollutant discharge beyond the minimum technology-based discharge standards.

Intra-plant trading. A point source allocates pollutant discharges among its outfalls in such a way that the combined permitted discharge with trading is no greater than the combined permitted discharge without trading and discharge from each outfall complies with the requirements necessary to meet applicable water quality standards.

Pre-treatment trading. An indirect industrial source that discharges to a publicly owned treatment works (POTW) arranges for greater-than-required reductions in pollutant discharge by other indirect sources in lieu of upgrading its own pretreatment beyond the minimum technology-based discharge standards.

Point/nonpoint source trading. A point source arranges for control of pollutants from a nonpoint source to undertake greater-than-required pollutant reductions in lieu of upgrading its own treatment beyond the minimum technology-based discharge standards.

Nonpoint source/nonpoint source trading. A nonpoint source arranges for more cost-effective control of other nonpoint sources in lieu of installing or upgrading its own controls or implementation of pollution prevention practices.

Source: U.S. Environmental Protection Agency *(Draft Framework for Watershed-Based Trading*, May 1996).

Trades may be negotiated between two private parties or trading can occur within the context of an organized program. Trading can even occur within a plant. EPA's *Draft Framework* identifies eight principles to be followed in order to conduct effluent trading within the framework of federal laws, regulations, and policies.

1) Participants meet applicable Clean Water Act technology-based requirements.

2) Trades are consistent with water quality standards throughout a watershed, as well as anti-backsliding and other requirements of the Clean Water Act and other federal and state laws and local ordinances.

3) Trades are developed within a TMDL process or other equivalent analytical and management framework.

4) Trades occur in the context of current regulatory and enforcement mechanisms.

5) Trading boundaries generally coincide with watershed or water body segment boundaries and trading areas are of a manageable size.

6) Trading will generally add to existing ambient monitoring.

7) Careful consideration is given to the types of pollutants traded.

8) Stakeholder involvement and public participation are key components of trading.

According to EPA's *Draft Framework*, TMDLs provide a basis for successful trading for two reasons:

1) TMDLs allocate pollution control responsibilities among covered dischargers using a process that can be easily adapted to incorporate trades.

2) Data and analyses generated in TMDLs typically enable water quality managers to better understand and predict the effects of proposed trades.

Trades can be incorporated in TMDLs as they are being developed so that final allocations reflect the trades. If sources consider trading after a TMDL is already in place, states may revise allocations to reflect the proposed changes. EPA review of revisions to TMDLs is required. Revisions to National Pollutant Discharge Elimination System (NPDES) permits may also be required. There may be costs associated with these revisions.

EPA's *Framework for Watershed-Based Trading* is expected to be complete in December, 1999.

State Response. Although the EPA encourages trading within a TMDL framework, trading can take place without TMDLs. Some states argue that the EPA has placed too much emphasis on TMDLs and that benefits can be realized from trading on water bodies that are not impaired. The Michigan Department of Environmental Quality concluded that Michigan needed to adopt administrative rules to provide clear authority for a statewide trading program that would extend beyond TMDLs.

DEQ staff note that, to date, there has been very little interest in effluent trading. In the short term, the department intends to handle such requests on a case-by-case basis, following the draft federal guidance. As resources allow, the DEQ would like to see state policy and guidance on pollution trading developed and disseminated so that local groups involved in TMDLs are aware of the trading option and understand the basics and the limitations. The department advocates flexibility in the TMDL development process, and feels pollution trading will certainly play a role in some future situations.

Examples of Trading Agreements. At the January 8 Council meeting, Tina Diebold, EPA, stated that water treatment plants in North Carolina pay into a state fund which supports best management practices (BMPs) at farms. This is an example of a point/nonpoint trade. The Tar-Pamlico Basin Nutrient Trading Program was established without a TMDL.

In another example, the Rahr Malting Co. in Minnesota traded limits on wastewater discharges into the Minnesota River for reductions in nonpoint source pollution upstream. This example is discussed in a recent article in *Pollution Engineering* (July 1997). There was concern regarding the ability to predict the amount of pollution reduction that can be achieved from altered land use practices. Thus, a margin of error and stepped up monitoring program were included as components of the trade. Rahr Malting Co.'s permit is more stringent than other current permits for discharges to the river in several respects. For example, the NPDES permit includes a phosphorous limit of 2 mg/l instead of the 3 mg/limit typically proposed by the Minnesota Pollution Control Agency. Conservative load reduction estimates were used to ensure that implemented practices have a measurable impact.

Rahr Malting Co. created a Minnesota River Corporate Sponsorship Program to address nonpoint source pollution upstream. Rahr established a $200,000 trust fund that will increase to $250,000 within five years. The trust fund pays for purchase of easements on sensitive agricultural lands, implementation of BMPs, and construction or restoration of wetlands. Long-term contracts, perpetual easements and land purchases are used to make sure the BMPs stay in place.

In Montana, the draft proposed TMDL for the Clark Fork River (the Voluntary Nutrient Reduction Program) proposes to allow new dischargers to trade their proposed discharge by paying others to reduce. For example, they could pay for implementation of agricultural BMPs. Also, the Missoula wastewater treatment plant is looking for "credits" for hooking up to the system current residential and commercial

users of septic systems, thereby reducing ground water contribution of nutrients to the Bitterroot River.

Benefits and Concerns. Potential benefits of effluent or emissions trading identified in presentations, testimony, and discussion at Council meetings or by reviewers of this document include:

- It is a cost-effective and efficient way to reduce water pollution.
- It should encourage research and development of more efficient and effective means of controlling emissions, since there is an economic incentive for those who can control emissions most cheaply.
- It can encourage innovations in addressing pollution problems.
- A framework can be established for emissions trading that results in environmental benefits. For example, the government could require a percentage reduction in emissions any time that a trade is made.
- It uses the marketplace to create incentives for accomplishing environmental goals.
- It allows growth to occur in a watershed while the water quality is improved or maintained.

Potential concerns regarding emissions or effluent trading raised in testimony and discussion include:

- It assumes that if one company can achieve pollution prevention and reduce its emissions, then another company should be able to take advantage of this situation and increase or maintain their pollution. There is no incentive for pollution prevention.
- Emissions trading does not account for localized concentrations of pollution. Persons living around one facility are subject to higher concentrations of pollutants than persons living around other facilities which are implementing pollution prevention.
- It may not be equitable to shift discharges to other places in the watershed without public participation in the decisionmaking process.

A commentor on the draft version of this section noted that a concern not yet raised was the potential for effluent trading to allow unanticipated degradation of state waters in cases where discharge limits incorporated into a MPDES permit allow a higher concentration of a pollutant than what is actually discharged (i.e. the discharger discharges effluent that may be much cleaner than is allowed in the permit). If the difference (i.e. "pollution rights") are traded away, the overall water quality may decrease because another discharger is now discharging additional pollutants, but both combined are still under the limits of the original discharge permit. The commentor suggested that a way to address this concern would be to require dischargers interested in trading to demonstrate: 1) the origin of their pollution credits, and 2) that the impact of allowing pollution to be discharged in another part of the watershed has been assessed.

Nationwide Policy Issues. Most nationwide policy issues that have arisen relate to point/nonpoint trades. Many commentors on EPA's draft framework raised concerns with respect to its treatment of point/nonpoint trading. Some issues that have arisen concerning point/nonpoint trades include the following:

- Fairness. Point source dischargers have argued that all those who contribute to pollution should share in making reductions necessary to achieve water quality goals. Point source dischargers are concerned about being expected to pay the costs of nonpoint source control when nonpoint sources are not regulated. Point source dischargers have argued that trading should not result in more stringent compliance standards than would otherwise be required without trading.

- Effectiveness. Concerns have been raised about the effectiveness of nonpoint source pollution controls. Minnesota is using computer modeling to predict the load reductions that result from implementation of BMPs. Concerns have also been raised about differences in the timing, location, and chemical characteristics of discharges from point sources versus nonpoint sources. For example, nonpoint source discharges may occur during certain weather events. (Note: Montana's forestry industry is evaluating ways to expand from the current silvicultural BMP audit focus on compliance monitoring towards effectiveness monitoring, including industry representatives attempting to quantify BMP-related sediment reduction on forest roads.)

- Baseline. In order for trading to result in a benefit, nonpoint source controls that are credited toward a trade should result in reductions that would not have occurred in the absence of trading. Establishment of a baseline has been very controversial in Minnesota.

- Enforcement and Accountability. Some environmental organizations have argued that enforceable point source controls should not be traded for unenforceable nonpoint source controls. Point source dischargers are concerned about being held responsible for enforcement of nonpoint source controls. Concerns have been raised about who will pay the cost of any additional monitoring, inspection, and enforcement required as a result of trading.

Most states do not have rules that address trading in a TMDL framework. Minnesota has developed a set of broad principles to guide trades.

Potential Policy Issues:

State law (Subsection 75-5-703 (2), MCA) permits the DEQ to allow for effluent trading when establishing TMDLs. However, the state currently does not have specific policy or guidance regarding effluent trading as a component of TMDLs, or the DEQ's water quality programs in general. Is Montana ready to (and does it need to) develop such policy, and if so, what form should it take, and what should be incorporated? Should it be in statute or should the DEQ provide program guidance? Should it address the issues mentioned above? Others? What extent of the decisions should be set in policy/guidance vs. what should be left to the discretion of negotiators on a case-by-case basis?

Trades could be addressed on a case-by-case basis in the context of TMDL development or modification. Information could be provided to participants about issues that have arisen at the federal level or in other states. Advantages of this approach include: it allows for maximum flexibility to develop creative and innovative solutions; it allows interested parties in a watershed to propose trades consistent with their values and watershed-specific concerns; and it focuses the energy of interested parties on TMDL development, not policy development.

Statewide principles or guidelines for trades could be developed by the DEQ or established in state law. Advantages of this approach include: it provides an opportunity for all Montanans to consider policy

issues and participate in decisionmaking on a statewide basis; it minimizes the need to "reinvent the wheel" in each watershed; and it prevents participants from wasting time on developing trades that are unacceptable and would not be approved by the DEQ.

Subcommittee/Council Recommendation:

- The topic of effluent trading should be considered for inclusion in EQC HB 546 implementation oversight next Interim. Options for Council activities related to this topic include: an update on the EPA's finalization of their guidance for trading (due 12/99) and related demonstration projects, polling a few point source dischargers in Montana to determine their interest in trading, checking back on related activities on the Clark Fork, requesting the DEQ to notify the EQC if there is an interest in trading outside of TMDLs, and working with the DEQ to evaluate whether or not policy issues need to be addressed.

Definition of Threatened

Background: Concerns have been raised with the Statewide TMDL Advisory Group (STAG) about the definition of "threatened" in HB 546. The new definition will affect development of Montana's Clean Water Act Section 303(d) list for the year 2000. DEQ staff note that although the new definition has not yet been applied to the entire 303(d) list, they are applying it in reviews of petitions to delist water bodies (e.g. Rock and Libby Creeks and the East Boulder River -- currently listed as threatened under the former (EPA) definition).

Montana Definition. HB 546 defined threatened as follows:

"Threatened water body" means a water body or stream segment for which sufficient credible data and calculated increases in loads show that the water body or stream segment is fully supporting its designated uses but threatened for a particular designated use because of:
(a) proposed sources that are not subject to pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices; or
(b) documented adverse pollution trends. (75-5-103, MCA)

This definition establishes a higher threshold than the DEQ has used in the past for listing a water body as threatened. It also differs from the definition used in guidance developed by the EPA. A commentor on the draft version of this report noted that the clarification of threatened was one of the major objectives of HB 546. Another noted that the wording in the definition was chosen to ensure that streams so designated were in fact likely to experience water quality limitations in the future based upon good scientific documentation. The commentor asserted that the revision was intended to eliminate much of the subjective analysis used to place water bodies on the earlier 303(d) lists.

Another commentor expressed concern over the amount and quality of data needed to document an adverse pollution trend, referring to DEQ staff statements that five to seven years of good quality data could be necessary to determine the existence of an adverse trend. He added that there are not many waters with this level of data, nor many where such data could be gathered before the land use considered to be threatening were approved, thereby making it almost impossible to develop and implement a

preventative TMDL to assure the threatened stream continues to support its beneficial uses. He suggested the EPA definition of threatened would better address this issue.

Federal Guidance. EPA guidance instructs states to use the definition of threatened in the *Guidelines for Preparation of the 1996 State Water Quality Assessments (305(b) Reports)* in the development of 303(d) lists, as follows:

> A water body is fully supporting but threatened for a particular designated use when it fully supports that use now but may not in the future unless pollution prevention or control action is taken because of anticipated sources or trends.

The guidance document goes on to say:

> States should use this category to describe waters for which actual monitoring or evaluative data indicate an apparent declining water quality trend (i.e., water quality conditions have deteriorated, compared to earlier assessments, but the waters still support uses). States may also choose to include waters for which monitoring or evaluative data indicate potential water quality problems requiring additional data or verification.

Other states in EPA's Region 8 generally use the EPA's definition.

According to the EPA, adverse trends can be documented with monitoring data or by modeling. DEQ staff believe that they would also use either monitoring data or modeling to document adverse trends. Unless DEQ's approach changes, a water body would be considered threatened under EPA's definition and Montana's definition if there are documented adverse pollution trends.

Differences, Concerns, and Potential Implications. The primary difference between the EPA and Montana is the treatment of water bodies that do not have documented adverse pollution trends, but for which there are proposed sources of pollution. Under Montana's law, a water body would not be considered threatened if proposed sources could be controlled. If proposed sources are subject to "pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices," the water body would not be listed. Under EPA's guidance, the water body would be listed even if the sources might be controlled. According to EPA's Regional TMDL Coordinator, the significance of this difference probably depends on how the DEQ interprets "reasonable land, soil and water conservation practices" (see definition in ARM 17.30.602(21), or refer to the "BMP" section of this chapter).

Furthermore, DEQ staff believe that the level of data required by Montana law in order to designate a water body as threatened is higher than the EPA requires. The EPA guidance is vague on this point.

The DEQ must complete its review of water bodies for the year 2000 list by October 1999. In the past, the DEQ listed streams as threatened if a new source of pollution was proposed, whether or not the source would be subjected to pollution controls or reasonable, land, soil and water conservation practices. As a result, DEQ staff suspect that many water bodies that are currently considered threatened may receive another designation for the year 2000 list. The actual effect of the change in definition will not be known until DEQ reviews available data. Water bodies that were previously designated threatened may be designated fully supporting, partially supporting or not supporting. When water bodies are removed from the list because there is a lack of sufficient credible data, the law (75-5-702 (6), MCA) requires the DEQ to monitor and assess that water body as soon as possible.

DEQ staff note that despite the differences between the federal and state definition, the department has the option of monitoring and reassessing any water body that fails to meet the new state definition. Where these waters also fail to pass the sufficient credible data test, the department is required to conduct such monitoring. New monitoring information in conjunction with existing data could be used to establish whether or not an adverse pollution trend exists for the water body, or, at a minimum, would establish the basis for future trends evaluations. Assurance of the availability of monitoring data to conclusively establish water body status, and the presence or absence of adverse pollution trends, should alleviate possible concerns over differences between the two definitions.

On a technical note, DEQ staff commented that Montana's definition of threatened may contain unnecessary and/or inappropriate wording, since it suggests that "calculated increases in loads" are a prerequisite for a threatened designation. They note that a considerable percentage of the state's water quality impairment problems (as reflected on the current impaired waters list) are not calculable in terms of loading. Examples include stream habitat degradation, deposited sediment, elevated water temperatures, and stream flow alterations. Such alterations may threaten or impair water quality, but are not measurable through loading calculations. In fact, the wording may be unnecessary since subsection (b) of the definition already requires a test of "documented adverse pollution trends."

Concerns have been raised about the implications of either a broad or narrow definition of threatened on the availability of federal or state grant funds for watershed activities. There is a trend toward allocating federal funds to give some preference to 303(d)-listed (i.e. impaired or threatened) streams. If Montana has a narrow definition of threatened, waters not meeting the definition would come off the list and projects proposed for these waters would lose the ability to compete for funding intended for listed waters.

The President's Clean Water Action Plan required state and federal agencies to compare their priorities and identify a list of watersheds that are high priority for all or most of the agencies. The agencies were then directed to develop a unified watershed assessment for those watersheds. Although it may be intuitive that EQIP funding, and funding from other agencies, should be directed to these watersheds, DEQ does not read the guidance as mandatory. The department and many other agencies are proceeding slowly on the Clean Water Action Plan until more is known about the level of funding and associated requirements. Also, the priority watersheds identified in the unified watershed assessment will not be identical to the individual priorities for any of the state and federal agencies. The DEQ will need to consider how the unified watershed assessment priorities mesh with the TMDL priorities being developed by the department and the Statewide TMDL Advisory Group (STAG).

The 1997 Montana Legislature included a provision in the appropriations bill (HB 2) that requires that EPA grant funds administered by DEQ (commonly known as section 319 funds) be used to address water quality impaired streams. This law addresses appropriations for the 1998-1999 biennium and DEQ will not reflect the new definition of *threatened* in the 303(d) list until the next biennium. Furthermore, DEQ has interpreted this language broadly and does not intend to require that streams remain on the list in order to be eligible for funds.

Potential Policy Issues:

- What impact might the changed definition have on waters listed and the ability to address water quality issues associated with waters that are only threatened at this point (via funding and other means)?

- The wording requiring a showing of calculated increases in loads may eliminate waters from being classified as threatened, based on their type of impairment (i.e. impairments that are not measurable in terms of load); it is unknown if this was intentional on the part of the Legislature, or not.

Subcommittee/Council Recommendations:

- The Subcommittee recommends that the topic of the changed definition of threatened also be included in Council oversight of HB 546 implementation next Interim. The DEQ should provide an update to the next EQC on the effect the new definition is having on 303(d) list entries and on the ability to obtain funding for, and to address water quality issues, on those water bodies likely to be removed from the list due to the new definition. EQC staff should coordinate with the DEQ and other states to assess the regional approach to this issue; if some conclusions result that are agreeable to Montana, suggestions could be made to the EPA for changes or refinements to their guidance to states on this subject.

- The Subcommittee discourages statutory changes this Session, but recommends the Statewide TMDL Advisory Group (STAG) and other interested parties begin discussions to determine if they feel the definition of threatened needs to be revised in statute. The STAG should report back to the Subcommittee or Council on the results of these consultations.

Use Support/Classification

Background:

Meeting Standards vs. Supporting Uses. When initial drafts of HB 546 were being worked on by legislative staff, there was use of a variety of terms for the same concept -- i.e. a water body which was "water quality-limited," "threatened," "impaired," "failing to achieve compliance with applicable water quality standards," and/or "not meeting designated uses." To clarify the bill, the terminology was narrowed to primary use of the terms "threatened" and "impaired," and these terms were defined in the bill and encoded in statute.

Combined references to "failing to achieve compliance with applicable water quality standards" and "not meeting designated uses" were eliminated under the rationale that compliance with water quality standards equates to meeting designated uses, although there may not be complete agreement in that interpretation. Some concern was raised early in the Interim that the elimination of the "designated use" language may have been a greater leap than should have been taken, but EPA and DEQ staff continue to express confidence that the language in statute is sufficient.

A commentor on this report noted that there are many parameters that adversely affect beneficial use support that do not have numeric water quality standards (e.g. phosphorous, sediment, and algae) or an aquatic life standard (e.g. nitrates). He suggested a way to address this issue would be for the Legislature to adopt scientifically-based aquatic life standards for these and other parameters.

Use Classification. According to DHES' (now DEQ) *Montana Water Quality 1994 305(b) Report*, Montana's waters were classified in 1955 according to their actual and anticipated uses. These can include drinking/food processing (after treatment), water-contact recreation, support of fish and wildlife (including aquatic life), agriculture, and industry. The Montana Water Quality Act requires the Board of Environmental Review to adopt rules to protect the quality of the state's waters as well as present and future beneficial uses. Surface and ground water use classification systems and water quality standards and criteria are defined in rule (ARMs Title 17, Chapter 20, Subchapters 6 and 10). Montana's numeric water quality standards are listed in DEQ *Water Quality Bulletin #7* (WQB-7). The Board may only downgrade (i.e. decide that a water body should support less uses than designated) a classification if it was mistakenly classified in the first place, but it may upgrade a classification.

Relative Ease and Difficulty of Making Use Support Decisions. The DEQ has developed an approach for determining the relationship between standards exceedences and the level of support of beneficial use (see Appendix F for the DEQ's *Proposed Beneficial Use Support Decision Guidelines*). There are some standards for which exceedences are relatively simple to ascertain. For these, a determination of use support (or lack of) may be relatively straightforward -- for others, it may be more difficult. For example, a level of arsenic in excess of 18 mg/l in a stream designated for current or potential use for drinking water is a clear exceedence of Montana's human health standard. According to DEQ's proposed *Guidelines*, any such exceedence in the last 3 years would cause them to find the water nonsupporting of this use -- cause to be placed on the 303(d) list.

In contrast to the above relatively straightforward decision on use support are some decisions related to the support of aquatic life. As shown in DEQ's proposed *Guidelines*, a support decision related to this use (aquatic life) can involve three categories of information: 1) chemical/bioassay, 2) biological, and 3) habitat. Within this category, there is also some variation in how straightforward the evaluations are, but many parameters (especially if there is a small set of data) refer to "reference conditions". Reference conditions are typically defined as the conditions found or expected in a water body of a similar character, possibly within the same eco-region (a large area of similar geology and plant communities). Reference streams can be defined on the ground (another portion of the same water body in better condition, or another water body nearby that is similar in character, but in better condition), or can be determined through what available literature says about what conditions can be expected without impairments. It is unknown how much "better" the reference water should be, whether it must be relatively "un-impacted" or whether any similar water that is fully supporting of its uses would qualify.

The reference condition topic may be a technical question that will be worked out through experimentation and evaluation. Or, there may be enough reliance on other parameters in the use support decision, that reference condition evaluations are supplemental to other analyses. However, the terminology in the decision criteria contain many terms that require scientific and decisionmaker interpretation. An example is a portion of the "fully supporting" criterion for the biological component of aquatic use support, as follows:

> Data indicate functioning, sustainable biological assemblages (assemblages include fish, macroinvertebrates and algae) none of which have been modified significantly beyond the natural range of the reference condition (>75% of reference condition) . . .

The DEQ notes they will work with the FWP to further develop fishery guidelines. DEQ staff also note that Ohio has adopted water quality standards using a fish "index of biological integrity" (IBI). These fish

IBIs have held up when challenged in court. DEQ staff have applied to the EPA for grant funding to develop an IBI for warm water fisheries for tributaries of the Upper Missouri.

Regarding fisheries use support, a commentor on the draft report noted that he hoped there was certainty that fully supporting a beneficial use does not necessarily mean maximum productivity or capability. He added that water quality standards are set at a level that will provide for a beneficial use (e.g. the conditions necessary to support growth and propagation of salmonid fisheries) -- those conditions may or may not be the same as those necessary to maximize fisheries production, he noted.

Potential Policy Issues:

- Does it matter (enough to suggest legislative changes?) that Montana's statute has a slight "disconnect" between water quality standards and beneficial use support? (DEQ staff note that it may be advantageous to recommend that the Board clarify in rule that waters that "are suitable for" certain uses, means "must be maintained suitable for" certain uses.)

- There has been mention that one way to address the fact that there are so many waters not fully supporting their beneficial uses is to change the beneficial uses that are assigned to them (i.e. reclassify water bodies). Such a proposal could be quite controversial, depending upon its scale. (DEQ staff note that the department could propose to the Board that classifications be subdivided, or that biologically-based standards be developed.)

- Is the Legislature comfortable with the definitional progress being made so far by DEQ regarding use support decisions? Is there any guidance regarding some of the more difficult parameters and their proposals? (DEQ staff note that the department has been making good progress in developing guidance for water use support decisionmaking, coordinating with the Statewide TMDL Advisory Group in these efforts, and that this process should be allowed to continue. They add that legislators are invited to participate in this process, and the department welcomes input from all interested persons. The department urged the Legislature to not consider legislative proposals for placing specific water use support criteria in statute.)

- How will the bull trout listing under the federal Endangered Species Act affect beneficial use support determinations, especially considering that temperature needs for bull trout are traditionally assumed to be much lower than typical statewide water quality standards? (Also related to interagency coordination topic...)

Subcommittee/Council Recommendation:

- The Subcommittee discourages related statutory changes this Session, but recommends that the Statewide TMDL Advisory Group (STAG) and other interested parties get together to determine if they feel there need to be statutory changes to address use support and classification issues. The STAG should report back to the Subcommittee or Council on the results of these consultations.

Sufficient Credible Data

Background: HB 546 required the DEQ, by 10/1/99, to revise the 303(d) list (the list of threatened and impaired waters) and "remove any water body that lacks sufficient credible data to support its listing." (75-5-702(6), MCA) The DEQ must revise the list using all "currently available data" from a wide variety of sources.

HB 546 defined sufficient credible data as:

> chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a water body is achieving compliance with applicable water quality standards. (encoded as 75-5-103(23), MCA)

In carrying out this mandate to revise the 303(d) list using all currently available data, the DEQ is soliciting water quality-related data from a variety of sources, and will then evaluate that information and information already in their files, to determine whether the waters listed on the 1996 303(d) list meet the sufficient credible data test.

The DEQ has issued draft criteria for their assessment of whether data for a water body are sufficiently credible. The criteria are based upon recommendations from the EPA that states incorporate relevant recommendations from a national, intergovernmental task force, now titled the National Water Quality Monitoring Council. The DEQ's "data quality objectives" are summarized in the matrices in Appendix E, with the DEQ's proposed minimum level of data highlighted via asterisks (**).

Two commentors on the draft report noted that the definition of sufficient credible data was carefully chosen during the drafting of the legislative proposal, adding that the wording was specifically intended to ensure that decisions to add water bodies to the 303(d) list are based on data that accurately reflect water quality conditions.

Data Quality and Volunteer Monitoring. How can the state obtain sufficient credible water quality data, in a timely manner, and get local communities involved in that data collection? Part of this answer may lie in the recent initiation of the Montana Volunteer Water Monitoring Program, funded via a DEQ pass-through of EPA 319 funds. The funds are being used to initiate a statewide volunteer monitoring program, including a related website (see http://nris.state.mt.us/wis/volwatmon.htm), and Montana Watercourse training sessions on volunteer water quality monitoring. As stated on the website, the purpose of the program is to:

> ... promote knowledge and stewardship of aquatic resources by teaching local citizen volunteers the skills needed to gather accurate, non-biased water quality information. Our intent is to build a program that incorporates "do-able" methods for volunteers and provides valuable information about Montana's surface water in a way that respects differing viewpoints. (http://nris.mt.gov/wis/volwatmon.htm)

An Montana State University, Extension Service representative involved in the Volunteer program notes that the program collects chemical (pH, temperature, dissolved oxygen), biological (macroinvertebrates, pollution tolerance index), and physical (estimated stream flow, visual survey, photo survey) data. He expressed concern that the statute states "physical, chemical OR biological" data, noting that a combination of these should be required. (DEQ's approach uses a combination, except where there is "overwhelming evidence" of impairment.) He notes the proposed approach addresses some of his

concerns and suggests the approach be reviewed by additional professionals (e.g. a hydrologist, geologist, water quality specialist, etc.), land managers, and landowners.

DEQ staff note that they will emphasize the need to make sound technical decisions regarding water body status and will be considering all available sources of information (including that from volunteers). Volunteer monitoring information has been, and may continue to be, sufficient in some cases to assess the status of a water body. At a minimum, it can be used to supplement the available data record, or alert the DEQ to problems they were not aware of.

A commentor on the draft of this report described his perception of a bit of a quandary related to this topic, noting:

> While we support a volunteer monitoring program to assist in meeting an obvious gap in the database of water quality conditions in such an expansive state, we must also recognize the potential limitations of some of the data collected. We also understand the concem of DEQ relative to the timeframe within which they must develop their criteria for sufficient credible data decisions. However, the state is faced with a situation that requires a short timeframe for nearly all aspects of the TMDL program. We recognize this as a significant challenge for all, and especially DEQ, but the state must move forward with reasonable speed *(edited slightly by EQC staff)*

Potential Policy Issues:

- What will these data quality objectives, if implemented as drafted, mean for listed (and potentially listable) waters? At this point, what proportion of the waters on the 1996 list would likely fail to meet the sufficient credible data test? 90%? 40%? 10%? What might these waters have in common (geography, size, type of impairment, etc.), if anything? From the potential effects (or otherwise), is the "bar" being set too low or too high?

- Varied groups have expressed interest in participating in collecting water quality data for assessing the waters in their areas, interacting with the DEQ 303(d) system to provide data that shows waters either deserve or don't deserve to be on the list, and conducting general water quality monitoring activities through schools, volunteer groups, etc. What do these data quality objectives mean for the ability of the public to participate in assessing and monitoring their waters? Is it likely volunteer monitoring could generate the full range of data necessary to list/delist a water? Will DEQ be providing information to Montana citizens on how to most effectively interact with their decisionmaking and data management system?

- Regarding the fledgling Volunteer Water Quality Monitoring program, "whose" program is it, and how long is the funding to last? What are the proposed products of the efforts under the grant, and can those products produce long-term results after grant expiration? Should something like this be made more official, or are such efforts best in the nongovernmental sector, presuming they are desirable?

Subcommittee/Council Recommendations:

- The Subcommittee acknowledges that voluntary monitoring, with the proper training of participants, can be a valuable component in water quality data gathering. The also acknowledge

that the DEQ is in a time crunch to get a lot of work done in a short time. They commend the Montana Watercourse training efforts related to voluntary water quality monitoring and related coordination between the Volunteer Monitoring program and the DEQ, to enable mutual benefit. The next Council should include in its HB 546 implementation oversight a review of the role volunteer monitoring is playing in TMDL implementation in Montana.

Septic Issues Raised in the Clark Fork VNRP (Surface Water/Ground Water Interactions)

Background:

Septics, Nitrogen, and the Clark Fork River. The Tri-State Implementation Council spearheaded a collaborative effort to develop a Voluntary Nutrient Reduction Program (VNRP) for the Upper Clark Fork River. The VNRP was recently signed by participants (including the DEQ) and submitted to the Environmental Protection Agency as a TMDL for nutrients for the Upper Clark Fork.

At its Missoula meeting in November 1997, the EQC Water Policy Subcommittee heard from local citizens and government officials regarding difficulties the Tri-State Council was having incorporating into the VNRP current and projected nutrient contributions from individual septic systems in the area. The immediate concern at the time was the expected need for the city to invest over $10 million in treatment plant upgrades, commitments on the part of other dischargers to reduce their inputs, yet the concern that other nutrient loadings (including those from septic systems) from outlying areas would prohibit the achievement of the nutrient target set in the VNRP. The Missoula City/County Health Department estimated that 6,780 septic systems in the Missoula urban area were contributing 257 kg/day of nitrates to the Clark Fork and Bitterroot Rivers, or almost half of the 1995 daily nitrogen loading for the Missoula wastewater treatment plant (WWTP), which serves a much greater number of users.

For the remainder of the Interim, the Subcommittee tracked the progress of the city, county, DEQ, and Tri-State Council in addressing this issue. In January, DEQ Subdivision staff provided an overview of septic regulation from the state perspective, and DEQ Monitoring staff discussed what was known about other waters in the state that have been documented to have impairments due to individual waste water systems. Subsequent Subcommittee meetings involved informal EQC staff updates on the progress the participants in the VNRP were making in addressing this concern.

The VNRP includes the following conclusion regarding ground water sources of nitrogen and phosphorous:

> It is apparent that to ignore the impact of septic systems on surface water while implementing nutrient removal measures at the WWTP will:
> 1) not solve nutrient problems in the river for the long term;
> 2) place the economic burden of temporarily solving the problem on those people connected to the WWTP;
> 3) provide a disincentive to connect to public sewer thus perpetuating groundwater impacts of septic systems; and
> 4) further encourage large parcel suburban and rural sprawl resulting in septic discharges that cannot be feasibly sewered and adequately treated. (*Clark Fork River VNRP*, 1998, p.21.)

To address these issues, the city, county, and DEQ committed to developing strategies in Missoula and

surrounding areas that will:

a) Recognize the connection between septic effluent/ground water/surface water in the Upper Clark Fork watershed and in the Missoula Valley;
b) Review state and local regulations with the goal of removing disincentives and/or offering incentives for connecting new and existing septic systems to public sewage collection and treatment facilities that will remove nutrients;
c) Provide for the extension of sewer mains into high density unsewered areas as quickly as is feasible;
d) Maintain existing local regulations and modify state subdivision regulations as appropriate to encourage clustering and smaller lots in new subdivisions and provide for the economically feasible, orderly and timely connection of new subdivisions in the area onto public sewer;
e) Give credit to the Missoula WWTP for meeting part of its nutrient reduction as additional connections of existing septic systems are made;
f) Encourage development of alternatives to municipal wastewater disposal to reduce nutrients from new development (such as land application, wetlands, and nutrient removal septic systems);
g) Connect 50 percent of the existing 6,780 septic systems in the Missoula urban area, resulting in an estimated reduction of approximately 130 kg/day nitrogen discharged to the Bitterroot and Clark Fork Rivers;
h) Continue connecting existing septic systems in the Missoula urban area to public sewage treatment and collection facilities at a rate approximately equivalent to the number of new septic system permits issued with the Missoula Valley Water Quality District;
i) Reduce ground water phosphorus loads to the Bitterroot and Clark Fork Rivers by 10%, or approximately 2 kg/day, and reduce surface water loads by 10% through such measures as best management practices for urban/suburban development and agriculture; control of stormwater pollution sources; enforcement of existing local regulations such as the Aquifer Protection Ordinance, Riparian Regulations, and Lakeshore Regulations; and through connection of septic systems located in shallow ground water areas near streams to public sewer.
j) Limit nutrient loading from septic systems outside the Missoula WWTP service area.

Efforts will also be made to work with and involve Ravalli County to assess ground water/surface water contamination from increasing septics in the Bitterroot River Valley and develop a strategy to reduce these impacts. (*ibid.*)

This agreement was sufficient to satisfy the other VNRP participants that something would be done about ground water contributions of nitrogen and phosphorus, so that the VNRP could move forward, but many hurdles lie ahead in implementing these measures. The information in the box below lists other, and some overlapping, participant actions related to meeting instream nutrient targets through reducing impacts from septic systems.

DEQ's 1996 303(d) list showed 17 waters in Montana where DEQ had determined septics were at least partially contributing to water quality problems. Tri-State Council staff feel this is a big issue, and will become more widespread as others get into TMDL development.

Other Clark Fork VNRP Actions to Reduce Nutrient Loading from Septic Systems, by Participant

1. Missoula City-County Health Department
a) A strategy for treatment of septic systems as point sources will be explored. IN order to control the contribution of nutrients from septic systems entering surface water via ground water, changes will be needed in the way septic systems are permitted and, perhaps, constructed. This issue is especially relevant in the Missoula area where the large community investment in reducing nutrient discharge from the wastewater treatment plant will likely be offset in the long term by the continued proliferation of septic disposal systems.

Other Clark Fork VNRP Actions to Reduce Nutrient Loading from Septic Systems, by Participant (cont.)

1. Missoula City-County Health Department (cont.)

a). (cont.)

Addressing septics as a nutrient point source will require the cooperation of the City, County, Board of Health and Montana DEQ to determine the appropriate allocation of allowable discharge and necessary mitigation strategies. Since owners of land on which septic systems may be placed in the future are not signatories to the VNRP, it will be necessary to develop some requirements to mitigate these sources through state and local point source regulation. Septic systems meet the definition of "point source" in 75-5-104, which "means a discernible, confined and discrete conveyance including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or vessel or other floating craft, from which pollutants are or may be discharged."

The Subcommittee does not intend that the treatment of septic systems as point sources will mean that state-authorized MPDES or groundwater permits would be required. The goal is to establish a sound basis for mandatory county and/or health department septic regulations (through Title 50 and Title 76 authorities) to deal with septic contributions to surface water.

b). The strategy will also consider ways to control septic densities outside of areas services by wastewater treatment facilities. This will require working closely with DEQ's Subdivision Section to implement lot size requirements and appropriate subdivision review policies that address the impacts of ground water on surface water quality and are protective of the nutrient targets. In Missoula County, outside the designated service area for the Missoula WWTP, the City, County, Board of Health and DEQ commit to development and implementation of a strategy that will:

1) estimate the discharge of septic nutrient effluent and track the number of new septic permits and new public sewer connections each year in the Missoula Valley;
2) develop a maximum permissible allocation of septic nutrient discharge to surface waters in the Missoula Valley;
3) institute adequate requirements and policies to implement the allocation;
4) explore options for addressing discrepancies in surface water and groundwater standards in areas where the two are strongly interconnected; and
5) develop a program to address potential groundwater contribution to surface water from existing small community land application and rapid infiltration systems.

2. Additional Septic Source Controls

Although the impetus for the development of the above strategy to treat septic systems as point sources and develop protective subdivision regulations is directly related to concerns over septic contributions to surface water in the Missoula area, the subcommittee recognizes that other developed and developing areas covered by the VNRP may also have similar problems. The subcommittee firmly believes that to ignore the impact of septic systems on surface water while implementing nutrient removal measures at publicly owned treat works (POTWs) will not solve nutrient problems in the river for the long term. Where necessary and feasible, the subcommittee will implement strategies in the VNRP communities that:

a) recognize the connection between septic effluent, ground water and surface water;
b) review state and local regulations with the goal of seeking opportunities to remove disincentives and/or offer incentives for hook-up to POTWs;
c) provide for the extension of sewer mains into high density unsewered areas as quickly as is feasible;
d) provide for the orderly and timely connection of new subdivisions onto public sewer;
e) give credit to wastewater treatment facilities for meeting nutrient reductions as additional hook-ups are made; and
f) encourage planning for alternatives to municipal wastewater disposal to reduce nutrients from new development (such as land application, wetlands, and nutrient removal septic systems).

Source: Clark Fork River VNRP, pp. 24-25.

Septic Regulation in General. According to DEQ staff, a properly-sited and well-maintained septic system is relatively efficient at removing most pollutants from waste. It is not, however, very efficient at removing nitrogen, in some cases removing as little as 7% of the nitrogen it receives.

In Montana, nitrogen is regulated via water quality standards, which limit nitrogen concentrations to 10 mg/l in surface and ground water (the nondegradation requirements usually limit the maximum to 5 mg/l at the end of a ground water mixing zone). Because nitrogen is also a component of the conditions which encourage algal growth in surface water (if sufficient phosphorous is present), it is also subject to the state's general prohibitions (ARM 17.30.637), which prohibit discharges that "produce undesirable aquatic life." In areas where ground water migrates to a surface water source with a minimum level of phosphorous already in the water, any increase in nitrogen concentrations in the receiving water could create excessive algal growth.

Regulatory approval of septic systems is based, partly, on the ability of waste to be diluted. Areas where the ground water moves relatively freely typically meet the requirements of the state's nondegradation provisions relatively easily. Geologically, the locations with water moving most freely are Montana's alluvial aquifers (river valley floors). Thus, DEQ staff note that the state's regulatory policy may, in effect, be encouraging development in the areas most likely to drain to nearby rivers.

Have septic proposals been denied due to these limitations? DEQ staff noted that it would be difficult to deny proposals for one or two septic systems that could not be shown to directly impact surface water nitrogen levels, if they met all the other requirements in state law. However, proposals for multiple systems in close proximity to surface water, in certain areas, can be more easily evaluated for potential for spurring algal growth. For example, a subdivision proposal in Lincoln County was reviewed via an environmental impact statement (EIS) due to concerns related to nitrogen loading to an adjacent lake. The EIS analysis determined that the lake sufficiently "flushed itself" (i.e. had flow in and out of it) to enable it to be cleansed of enough nitrogen to alleviate concerns. Another lake with an adjacent proposed subdivision, however, does not appear to be adequately flushed with fresh water, and concerns may persist there.

The DEQ is currently working with interested parties on determining whether existing regulatory mechanisms can support the clustering that Missoula County is advocating. They have formed a cluster team, comprised of representatives of the DEQ and Missoula and Gallatin County agencies. The team's mission is to evaluate any disincentives to cluster development in existing state and local regulations or laws and make recommendations on statutory, regulatory, or nonregulatory changes that will encourage cluster development. Once the team has a draft set of recommendations, they will be submitted to other statewide organizations (e.g., the Montana League of Cities and Towns, Montana Association of Counties, and state realtors) for additional input. The ultimate goal will be to introduce any statutory changes to the 1999 Montana Legislature and make any regulatory or nonregulatory changes over the next two years.

In addition, in 1998, DEQ initiated a bill drafting effort to address the multiple-jurisdiction (DEQ, local boards, and local Water Quality Districts) issue related to septic review (related to a recent Supreme Court decision -- Skinner v. Lewis and Clark County), but canceled their efforts due to objections from local jurisdictions.

A commentor noted that the Board of Environmental Review recently made changes to Montana's ground water standards and suggested the EQC track the status of the changes and evaluate whether the changes

limit the state's ability to adequately regulate the impacts of septic tank discharges on surface water quality.

Potential Policy Issues:

- Are there sufficient authorities in state and local law to address ground water/surface water nitrogen problems that are not being implemented (or could be implemented better), or are policy changes necessary to avoid continued and additional problems? Is this a problem that should be deliberated at the state level, or are these conditions varied enough and localized enough that problems should be addressed at the regional or local level (i.e. through local ordinances and/or TMDL development)?

- EQC's Growth Subcommittee has also heard concerns expressed about septic regulation and its influence on land use. This committee (as well as the Water Policy Subcommittee) has heard testimony that, in some areas, the current policy which generally requires a minimum lot size of 1 acre for use of an individual well and septic system is promoting sprawl, and reduces the likelihood that the resulting land uses could economically be served by sewer in the future. Are there options to solve the water quality problem that could assist in resolving land use/local service provision issues as well, without undue impacts to housing costs or personal property? At their August 4, 1998, meeting, the Subcommittee requested Ms. Vandenbosch provide to the EQC's Growth Subcommittee a copy of the 7/29/98 version of this septic issue writeup for their consideration.

- Are the facts expressed about problems with nitrate removal broadly enough agreed-upon that public policy can be based on them?

- How can recommendations such as those incorporated into the VNRP maintain the incentive for developers to provide new and affordable housing, as well as the result of that being affordable? Is there a way that these goals can be accomplished in a voluntary (rather than regulatory) manner?

Subcommittee/Council Recommendations:

- The Subcommittee recommends the next EQC consider the Clark Fork VNRP as a valuable informational resource in any further consideration of septic issues in Montana. If the proposed State Water Plan chapter on Surface Water/Ground Water Interaction is likely to be initiated next Interim, the next EQC could recommend the issues presented here, and the strategies included in the VNRP, be revisited in that process.

- The Subcommittee supports DEQ's efforts to deal with the existing overlapping jurisdiction of subdivision review, which includes sewage system approval. They also support DEQ's plan to establish a technical review committee to evaluate current standards for site-specific wastewater systems to make sure they are providing necessary protection of public health and the environment and to help identify new and/or more effective technology. Lastly, they support (and encourage the next EQC to track, if relevant) the efforts of DEQ's cluster team in developing means to promote clustering of residential units. The next EQC should request updates on these efforts where relevant.

Water Quantity Relationships

Background: A review of Montana's 303(d) list shows many water bodies where one "probable cause" of impairment is listed as "flow alteration." According to EPA guidance, this probable cause can be assigned to a water body that shows loss of habitat or erosion due to flow fluctuations (e.g. from reservoir operation), excessive dewatering, interbasin transfers, or other significant changes to a typical flow regime. This cause typically affects the ability of the water to support aquatic life and fisheries more than it affects other potential uses of the water body.

DEQ TMDL staff note that actions which can reduce impairments related to flow alteration include: considering downstream resources in reservoir operation planning, voluntary agreements to alter diversion timing or amount, improving efficiency of water use, and instream flow leasing, to name a few. Some of these actions, and others, were recently taken in the Ruby River drainage to address flow-related issues (see also "How do we deal with flow alternations?" section in Chapter 3 of this report).

There was strong concern during the drafting of HB 546 that water rights not be affected, hence the changes via amendment to Section 6 of the bill, which was encoded to read:

> **75-5-705. Nonimpairment of water rights.** Nothing in this part may be construed to divest, impair, or diminish any water right recognized pursuant to Title 85.

A commentor noted that he feels the federal Clean Water Act and Montana's TMDL law include language protecting state water rights and affirming the administrative mechanisms under state law for the allocation of water. In addition, he notes, the Montana Constitution protects water rights. He believes it is too early to know whether the language in HB 546 offers the appropriate protection of state-based water rights. The language is an abbreviated version of the substantive language in the federal Act. He concludes that for a state TMDL program to have any support from the agricultural community, water rights protective language is a necessity.

DEQ staff note that they believe there are numerous voluntary actions that can be taken by irrigation districts, landowners, and dam operators to minimize the impacts of flow alterations and dewatering. They note that the department has absolutely no intention of interfering with any water rights.

A commentor provided a current illustration of a water quantity/TMDL issue on Careless Creek, a tributary to the Musselshell River below Deadman's Reservoir:

> DNRC sells irrigation water stored in the reservoir to downstream users on the Musselshell. A canal connects the reservoir to the Musselshell, but the canal cannot now carry the volume needed to get the purchased water down to the users. So, DNRC diverts the water through Careless Creek. High, sustained flows of irrigation water have severely eroded the banks of the creek, causing the creek's listing on the 303(d) list as impaired due to flow alteration. DNRC continues to use Careless Creek to deliver purchased water, but at less damaging flow levels. Landowners are using 319 monies to repair banks, but they cannot get satisfaction from DNRC that DNRC will no longer put the high flows down the creek.

Federal Usurpment Issues. Although EQC staff are currently unaware of specific evidence where the federal Clean Water Act has been interpreted as providing authority for the federal government to assert authority over water rights beyond federally-administered lands, concern exists over federal assertion of authority under other federal statutes. Some fear that TMDL policies will eventually affect

water rights, despite the wording incorporated in statute via HB 546.

DNRC staff recently provided to EQC staff a paper prepared by the Idaho Department of Water Resources (for the American Bar Association), which attempts to refute a purported National Marine Fisheries Service implication that irrigation withdrawals are "a significant reason why survival of Snake River salmon is not improving, and perhaps a significant reason for historical declines." Federal Endangered Species Act (ESA)-related requests for additional river flows was also of concern to participants at the first meeting of the (4-state) Legislative Leadership Council on River Governance, held earlier this year in Idaho.

Potential Policy Issues:

- Is there sufficient strength in the statutory wording to protect water rights in Montana? Are there other statutory methods to further protect them? How imminent is the concern?

- Is there an effective and available "menu" of actions (e.g. BMPs) that can be invoked to address issues of flow modification without getting into the arena of water rights?

- If flow-related impairments required an alteration in a diversion regime, could a voluntary agreement (e.g. the Ruby example) be incorporated into a TMDL without decreasing long-term control over water?

Subcommittee/Council Recommendations:

- The Subcommittee recommends exploration of potential cooperative opportunities to mesh efforts at solving streamflow-related water quality impairment problems with state drought planning efforts.

- The Subcommittee recommends continued Montana representation on the Legislative Leadership Council for River Governance. Montana's delegates to this Council should request further exploration of this issue and development of options for action, if appropriate.

Best Management Practices (BMPs)

Background:

Three Similar, but Different, Terms. . . The term "best management practices" or BMPs, generally refers to practices applied to land, structures, or activities to reduce existing or potential pollution. The specific term is not used in Montana's water quality statutes or rules, but two similar terms are -- "water quality protection practices" and "reasonable land, soil, and water conservation practices." They are defined and discussed below (including the source of their definition).

> **Water quality protection practices"** means those activities, prohibitions, maintenance procedures, or other management practices applied to point and nonpoint sources designed to protect, maintain, and improve the quality of state waters. Water quality protection practices include but are not limited to treatment requirements, standards of performance, effluent standards, and operating procedures and practices to control site runoff,

spillage or leaks, sludge or water disposal, or drainage from material storage. (75-5-103(35), MCA)

As shown, this definition is included in statute. It was enacted in 1993, within a bill that addressed nondegradation. The statement of intent for that bill included the following language:

> The legislature clearly intends that the nondegradation policy protect and maintain existing quality of state waters from any loss in the quality of those waters. The nondegradation policy is intended to apply to any activity that has the potential to affect existing water quality and requires department review of all such activities to ensure that degradation does not occur.
> In recognition that certain activities promote general welfare and may justify lower water quality in a particular water segment, the legislature intends that degradation be allowed in limited circumstances and under certain conditions. For example, if there is no alternative to a proposed project that does not result in degradation and the project is found to be in the best interests of the state, degradation may be allowed provided that **water quality protection practices** are implemented that limit degradation to the extent determined to be economically and technologically feasible. (emphasis added)

The second term is not defined in statute, but is used in statute (including those enacted by HB 546), and is defined in rule, as follows:

> **"Reasonable land, soil, and water conservation practices"** means methods, measures, or practices that protect present and reasonably anticipated beneficial uses. These practices include but are not limited to structural and non-structural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution producing activities. (ARM 17.30.602(21))

This term is used in statute nine times, as follows:

1) A water body can be considered threatened if proposed sources are not subject to pollution prevention or control actions required by certain permits or provisions, including **reasonable land, soil, and water conservation practices**. (see 75-5-103(31)(a), MCA)

2) Montana's statutes specify that treatment of wastes to a condition purer than the natural condition of the receiving stream is not necessary. "Natural" is described (in part) as conditions or material present over which man has no control or from developed land where all **reasonable land, soil, and water conservation practices** have been applied. (see 75-5-306(2), MCA)

3) Activities that are nonpoint sources of pollution initiated after April 29, 1993, when **reasonable land, soil, and water conservation practices** are applied, and existing and anticipated beneficial uses will be fully protected are not subject to Montana's nondegradation provisions, as such activities are statutorily determined to be nonsignificant. (see 75-5-317(2)(b), MCA)

4) Passage of HB 546 mandated the DEQ to coordinate with others to develop **reasonable land, soil, and water conservation practices** specifically recognizing established practices and programs for nonpoint sources. (see 75-5-703(2), MCA)

5) HB 546 also required the DEQ to assist and inform landowners regarding the voluntary program described in 4), after a TMDL is approved (75-5-703(6)(c), MCA). This is considered a pollution control measure via the language in the subsequent subsection in statute.

6-8) Section 75-5-703, MCA, subsections 8 and 9 refer three times to this term, as follows:

> "The department shall support a voluntary program of **reasonable land, soil, and water conservation practices** to achieve compliance with water quality standards for nonpoint source activities for water bodies that are subject to a TMDL developed and implemented pursuant to this section."

"If the monitoring program . . . demonstrates that the TMDL is not achieving compliance with applicable water quality standards within 5 years after approval of a TMDL, the department shall conduct a formal evaluation of progress in restoring water quality and the status of **reasonable land, soil, and water conservation practice** implementation to determine if:
(a) the implementation of a new or improved phase of voluntary **reasonable land, soil and water conservation practice** is necessary . . ." (75-5-703(8) and (9), MCA)

9) Lastly, pending completion of a TMDL, new or expanded nonpoint source activities affecting a listed water body may commence and continue, provided those activities are conducted in accordance with **reasonable land, soil, and water conservation practices**. (see 75-5-703(10)(c), MCA)

During legislative deliberations on HB 546, legislative staff raised the question to DEQ attorneys as to whether the bill needed to have a definition of "reasonable soil, land, and water conservation practices" in it, since the term was used fairly often, and seemed to connote an important threshold of activity. DEQ legal staff made an effort to determine how to define the term, but concluded they did not wish to put the rule definition in statute. The issue was not pursued, due to the speed the bill was moving through the Legislature, nor was it raised in the legal review of the bill by the Code Commissioner.

As mentioned, the term BMP is not defined in DEQ's statutes or rules, but is often used informally to refer to practices that can be applied to reduce nonpoint source water pollution. The DEQ has incorporated Montana's Silviculture BMPs into their Nonpoint Source Management program, as well as the NRCS *Technical Guide* standards (for agriculture), but DEQ staff note that these do not have the effectiveness monitoring component that is required by the term used in statute. (DEQ staff note that Montana's Nonpoint Source Management Plan was completed in 1991, and is scheduled to be updated and revised in 1999. Also, comments received on this report noted that the silvicultural industry has added an effectiveness monitoring component to the compliance monitoring it carries out through its voluntary audit program of BMP implementation. 1999 effectiveness monitoring concluded that the forestry BMPs were very effective in reducing sediment transport to streams.)

How Many BMPs Equal a RLSWCP? The term, "reasonable land, soil, and water conservation practices," is currently interpreted by DEQ's water quality standards staff representative as requiring "more than the standard BMPs." According to him, standard BMPs are necessary, but not necessarily sufficient to comply with state requirements (i.e., qualify as a reasonable land, soil, and water conservation practice), as there needs to be monitoring to show the BMPs are working (i.e. protecting present and reasonably anticipated designated uses). He was not yet aware of any specific practices that met the definition, but noted that those being used by the U.S. Forest Service and Bureau of Land Management were more likely to meet it because of the effectiveness monitoring that goes along with their BMP implementation. It is unknown whether he was aware of the effectiveness monitoring recently incorporated into the voluntary forestry BMP and audit program.

Definitional Snafu or Definitional Evolution? The above interpretation may leave Montana's TMDL statute somewhat circular in its implementation, especially with respect to new or expanded nonpoint source activities on streams that are on the list. For example, if Farmer X wants to expand or add activities that could add sediment (i.e. nonpoint source pollution) to a stream that is listed on the 303(d) list as impaired due to excessive sediment or related habitat concerns, the statute allows Farmer X to add or expand these activities if "reasonable land, soil, and water conservation practices" are applied. However, the definition of these practices presumes designated uses will be supported, which would not be the case on an impaired stream.

This topic received a variety of comments during public review. Several commentors noted that the definition of reasonable land, soil, and water conservation practices was the result of an all-day debate in front of the Board of Health and Environmental Sciences, with the resulting definition reflecting somewhat of a consensus of a wide range of interest groups. They note that term and the term BMP are not the same, but are obviously related in many ways; generally, reasonable land, soil, and water conservation practices will include a combination of a variety of individual BMPs. They disagreed that reasonable practices require more than the "standard BMP". Another commentor noted that instream monitoring is the only direct way to begin to correlate BMP effectiveness with respect to non-point source pollution and beneficial use support. The commentor added that he felt the USFS and BLM nonpoint source efforts incorporated implementation monitoring, but not effectiveness monitoring, except in a few select drainages where less than useful attempts have been made to differentiate natural from human-caused nonpoint source pollution.

What EQC has done so far . . . EQC involvement in discussing BMPs is not new. The EQC was instrumental in the development of Montana's silvicultural BMP program and continues to track the implementation of these BMPs. During the 1995-96 Interim, the EQC heard an update from the Grazing Practices Work Group that was working to tailor general grazing BMPs to Montana.

In the 1997-98 Interim, one of DEQ's requests of the EQC was assistance with policy development. In an August 1997 meeting with the EQC co-chairs and the DEQ director and staff, a discussion of options for EQC assistance included a request for assistance with improving BMPs. This was a topic the EQC had already identified in their Work Plan as a topic they wished to pursue over the Interim.

In March 1998 the EQC hosted a mini-seminar on BMPs related to nonpoint source water pollution control. In preparation for the meeting, EQC staff compiled a background matrix on the nonpoint BMP information that they knew about, divided by type of nonpoint pollution addressed in the state's 1990 *Nonpoint Pollution Plan*. A copy of the matrix is provided on the following pages. The seminar consisted of an agency representative for each of the six topics providing their perspectives on the effectiveness of BMP application in Montana, and how they and their application could be improved. After the panel, a variety of invited participants shared their perspectives and suggestions. The presenters contributed the following as "keys to success" for BMPs to be applied and effective:

Silviculture:
- BMPs need to be stakeholder initiated,
- There needs to be a strong educational component,
- There also needs to be a monitoring component to evaluate whether BMPs are achieving their intent,
- The measures, and the information used to develop them, have to be credible,
- The BMPs have to be evolving and nonstatic.

Agriculture:
- BMPs need to be applicable on an area-wide level,
- They need to be locally led and coordinated,
- They should be developed through a collaborative process,
- They should include strong information and education components,
- They need to be flexible and phased,
- Persons desiring results need to be patient.

Resource Extraction:
- BMP effectiveness is dependent upon commitments and competence of operators,
- BMPs need to be achievable and cost-effective.

Hydromodification:
- BMPs need to be voluntary,
- They need to incorporate good technical information,

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SELECTED SOURCES OF NONPOINT SOURCE WATER POLLUTION, BY LAND USE	Most relevant inform voluntary stewardsh practices in Montana	ntives to use the untary practices	BMPs are restorative, protective, or both	BMPs are required
SILVICULTURE	• Forestry BMP public through DNRC (BMPs since publication)	erest in protecting er quality ncern over additional ulation miliarity with BMPs is essary to compete for fulfill sale contracts iring BMPs.	**Protective;** potentially restorative	- Specific practices are required in SMZs (Streamside Management Zones) - All state and some private sales require BMP compliance by contract.
AGRICULTURE: - Rangeland/Grazing	• NRCS "Technical G product of Grazing Pr likely requires assistar • Grazing BMP bookle DNRC - CD Bureau (t • "Tips on Land and W Small Farms and Ran • Montana Farm *A* S Fact Sheets (MSU Ex • "Common Sense an (DHES) • Groundwater Protec Ranchers (DHES/AER	ncern for resources erest in diversifying me sources (e.g. eation access) avoid regulation and ntain flexibility st-share opportunities	**Both.**	- BMPs required for cost-share/payment programs (EQIP, CRP, 319, 223, RDGP grants) - Required for grazing permits on federal land; some required on state land - DEQ could require if practices are causing "pollution"
- Dryland	• NRCS Tech Guide; assistance to impleme • "Tips on Land and W • Fertilizer & Pesticide (MSU Ext.) • "Environmental Stew Facilities" (MSU Ext./D • "Common Sense an • "Groundwater Prote	ne as above (plus loss roduction for saline ps).	**Mostly protective.** (restorative for seeps)	- Required for cost-share/payment programs - DEQ could require if causing "pollution"
- Irrigated	(same as above)	ne as above.	**Mostly protective.**	Same as above.
- Feedlots/Animal Holding	• NRCS Tech Guide • DEQ "Guide to Anim Management and Wat in Montana"	ne as above.	**Both.**	- BMPs required if DEQ Confined Animal Feeding Operation (CAFO) permit required.

STATUS OF BEST MANAGEMENT PRACTICES (BMPs) IN MONTANA (Seminar Draft)

SELECTED SOURCES OF NONPOINT SOURCE WATER POLLUTION, BY LAND USE	Most relevant information available on voluntary stewardship/low-impact practices in Montana	A Montana natural resource agency endorses/ distributes information on practices	Practices are a result of collaborative effort between agency and Montana land use community	Multi-Agency official endorsement/ encouragement of recommended land use practices	Training is available on the recommended set of voluntary practices	Voluntary practices are results-based, or regionalized	Some type of auditing or monitoring program exists for application of voluntary practices	Incentives to use the voluntary practices	BMPs are restorative, protective, or both	BMPs are required
SILVICULTURE	• Forestry BMP publication available through DNRC (BMPs have been revised since publication)	**Yes.** (DNRC)	**Yes.** EQC-sponsored effort in 1988-89. (Result of 1987 HJR49)	**Yes.** DEQ, USFS, BLM, FWP, and others participate in program and audits.	**Yes.** (Workshops jointly provided by Montana Logging Association and DNRC.)	**No.** (May be tailored to site conditions.)	**Yes.** (Random sample followup by BMP audit teams.)	- Interest in protecting water quality - Concern over additional regulation - Familiarity with BMPs is necessary to compete for and fulfill sale contracts requiring BMPs.	**Protective;** potentially restorative	- Specific practices are required in SMZs (Streamside Management Zones) - All state and some private sales require BMP compliance by contract.
AGRICULTURE: - Rangeland/Grazing	• NRCS "Technical Guide" (includes product of Grazing Practices Work Group); likely requires assistance to implement • Grazing BMP booklet being prepared by DNRC - CD Bureau (target 1/99) • "Tips on Land and Water Management for Small Farms and Ranches" (DNRC/MSU) • Montana Farm *A* Syst Worksheets and Fact Sheets (MSU Ext./USDA) • "Common Sense and Water Quality" (DHES) • Groundwater Protection for Farmers and Ranchers (DHES/AERO)	**Yes.** (DEQ, DNRC, Conservation Districts, NRCS, MSU Extension)	**Yes.** Grazing Practices Work Group effort (1994-96?); some public comment on NPS Mgmnt. Plan; multi-agency advisory group for Farm *A* Syst products	**Yes.**	**Yes.** (NRCS Grazing Lands Conservation Initiative, DNRC Rangeland Resource Program, DNRC Consevation Districts Bureau, CDs, Extension.)	**Sort of.** (Some ability to choose practices based upon effects trying to address; some regionaliza-tion in prescribed grazing practices)	**Not for voluntary application.** (BMP application checked by permitting agency if BMPs were required.) Grazing Pract. Work Group considering audit program, with a demonstration audit this spring.	- Concern for resources - Interest in diversifying income sources (e.g. recreation access) - To avoid regulation and maintain flexibility - Cost-share opportunities	**Both.**	- BMPs required for cost-share/payment programs (EQIP, CRP, 319, 223, RDGP grants) - Required for grazing permits on federal land; some required on state land - DEQ could require if practices are causing "pollution"
- Dryland	• NRCS Tech Guide; likely requires assistance to implement • "Tips on Land and Water..." (DNRC/MSU) • Fertilizer & Pesticide BMP Info Sheets (MSU Ext.) • "Environmental Stewardship for Fertilizer Facilities" (MSU Ext./Dept. of Ag.) • "Common Sense and Water Quality" • "Groundwater Protection for Farmers..."	**Yes.** (same as above, plus MT Salinity Control Association)	Public comment on NPS Plan	**Informal.** (DEQ, DNRC, Mt Dept. of AG.)	**Yes.**(DNRC, Mt. Sal. Control Assoc., MSU Ext., Mt. Dept. of Ag. pesticides)	**Sort of.** (some ability to choose practices based upon effects trying to address)	**Not for voluntary application.**	Same as above (plus loss of production for saline seeps).	**Mostly protective.** (restorative for seeps)	- Required for cost-share/payment programs - DEQ could require if causing "pollution"
- Irrigated	(same as above)	**Yes.** (same as for range)	Public comment on NPS Plan	**Informal.** (see above)	**Yes.** (CDs, NRCS, DNRC, Ext., Agrimet, Dept of Ag - pesticides)	**Sort of.** (see above)	**Not for voluntary application.**	Same as above.	**Mostly protective.**	Same as above.
- Feedlots/Animal Holding	• NRCS Tech Guide • DEQ "Guide to Animal Waste Management and Water Quality Protection in Montana"	**Yes.** (same as for range)	unknown	**Informal.** (see above)	**Yes.** (CDs, NRCS, DEQ, DNRC, Ext.)	**Sort of.** (see above	**Not for voluntary application.**	Same as above.	**Both.**	- BMPs required if DEQ Confined Animal Feeding Operation (CAFO) permit required.

STATUS OF BEST MANAGEMENT PRACTICES (BMPs) IN MONTANA (Seminar Draft) (cont.)

SELECTED SOURCES OF NONPOINT SOURCE WATER POLLUTION, BY LAND USE	Most relevant information available on voluntary stewardship/low-impact practices in Montana	A Montana natural resource agency endorses/ distributes information on practices	Practices are a result of collaborative effort between agency and Montana land use community	Multi-Agency official endorsement/ encouragement of recommended land use practices	Training is available on the recommended set of voluntary practices	Voluntary practices are results-based, or regionalized	Some type of auditing or monitoring program exists for application of voluntary practices	Incentives to use the voluntary practices	BMPs are restorative, protective, or both	BMPs are required
RESOURCE EXTRACTION/ MINING: - Abandoned/ Inactive Mines	• DEQ standards and specifications for abandoned mine reconstruction contractors • No info for mine owners	Yes, for contractor info. (DEQ)	No.	No.	No.	Contractor info only.	Compliance inspections for reclamation contracts.	None.	Reclamation contracts are both.	
- Placer Mining	• DEQ/Mt. Bureau of Mines and Geol. "Placer Mining BMPs" publication	Yes. (DEQ and MBMG)	No.	Yes. (DEQ, MBMG, USFS, EPA, BLM)	No. (MBMG 1997 application for $ unsuccessful)	No.	Small mines are inspected.	unknown	Protective.	- If mine requires permit (i.e. does not quality for Small Miner Exemption)
HYDROMODIFI-CATION: - Streambank/ Stream Channel Alterations and Construction Activities	• "Montana Stream Management Guide" (DEQ/MACD) (mostly information; some practices) • NRCS Tech Guide (Section 4 - Restoration Techniques)	Yes, for Stream Guide.	Yes, for Stream Guide. (DEQ, MACD, FWP, DNRC, Rip./Wetl. Asso., EPA, USFS)	Sort of; through Stream Guide?	Nothing Specific.	No.	No.	- Interest in stream protection/restoration	Both.	- 310 permit may require Tech Guide practices
- Flow Regulation/ Modification	• A smidgen in the Stream Management Guide (p. 26)	No. (except Stream Guide)	Yes for Stream Guide practices (?)	Nothing formal.	No.	No.	No.	NA	NA	
- Construction and Operation of Dams	• No voluntary information readily available	No. (except for regulated dams)	No. (no practices)	No. (no practices)	Only for emergency response	No.	No.	NA	NA	- Specific construction and operation practices required for high-hazard dams
LAND DISPOSAL: - Solid Waste and Sludge Disposal	• Montana Guidance Manual for Controlling Stormwater Discharges, Vol. 2 (BMPs)[2] • DEQ Guide to Animal Waste Management and Water Quality Protection in Montana	Yes. (DEQ)	No. (yes for Animal Waste Guide)	Yes. (for what's available) (EPA/DEQ)	Yes. (MACO/DEQ)	Not voluntary, but must choose practices to meet goals	Partial inspections under regulatory program.	None	Protective (permitted facilities)	- BMPs required at permitted solid waste facilities - BMPs are required at sludge disposal facility
- On-site Wastewater Treatment	• 1980 EPA Design Manual for Onsite Wastewater Treatment Systems • Home*A*Syst -- An Environmental Risk-Assessment Guide for the Home (MSU)	Yes. (DEQ)	No.	Yes. (see above)	Only on design standards (EPA/DEQ)	No.	No.	No.	Protective	- Compliance with design standards required
- Runoff/Leachate from Land Treatment or Hazardous Waste Disposal Sites	• 1986 DEQ publication on General Guidelines for Operation of Soil Treatment Facilities	Yes. (DEQ)	No.	Yes. (EPA/DEQ; DEQ only for land treatment)	Yes. (DEQ)	Must meet goals; practices modified for site-specific conditions	Permitted facilities only	- Meet regulatory requirements	Protective	- BMPs required at permitted land treatment facilities - BMPs required at permitted hazardous waste facilities

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Training is available on the recommended set of voluntary practices	Voluntary practices are results-based, or regionalized	Some type of auditing or monitoring program exists for application of voluntary practices	Incentives to use the voluntary practices	BMPs are restorative, protective, or both	BMPs are required
No.	Contractor info only.	Compliance inspections for reclamation contracts.	None.	Reclamation contracts are both.	
No. (MBMG 1997 application for $ unsuccessful)	No.	Small mines are inspected.	unknown	Protective.	- If mine requires permit (i.e. does not quality for Small Miner Exemption)
Nothing Specific.	No.	No.	- Interest in stream protection/restoration	Both.	- 310 permit may require Tech Guide practices
No.	No.	No.	NA	NA	
Only for emergency response	No.	No.	NA	NA	- Specific construction and operation practices required for high-hazard dams
Yes. (MACO/DEQ)	Not voluntary, but must choose practices to meet goals	Partial inspections under regulatory program.	None	Protective (permitted facilities)	- BMPs required at permitted solid waste facilities - BMPs are required at sludge disposal facility
Only on design standards (EPA/DEQ)	No.	No.	No.	Protective	- Compliance with design standards required
Yes. (DEQ)	Must meet goals; practices modified for site-specific conditions	Permitted facilities only	- Meet regulatory requirements	Protective	- BMPs required at permitted land treatment facilities - BMPs required at permitted hazardous waste facilities

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SELECTED SOURCES OF NONPOINT SOURCE WATER POLLUTION, BY LAND USE	Most relevant informatives to use the voluntary stewardshiptary practices practices in Montana	BMPs are restorative, protective, or both	BMPs are required
CONSTRUCTION: - Urban/Suburban Development	• Montana Sediment a Manual • Best Development Pr example)	**Both.**	- Sediment/Erosion control BMPs are required if a construction permit is required (disturbing 5 acres or more).
- Transportation	• (same as above) • Mt. Dept. of Trans. BM control (road and bridge • BMPs for road salts	**Both.**	- Contractual conditions only
- Stormwater	• Montana Guidance M Stormwater Discharges • Montana Sediment a Manual	**Both.**	- BMPs are required if a stormwater permit is required

[1] Nonpoint-Source water pollution is characterized (4) discharge is related to man's use of the land (DHES, 1991).

[2] For land disposal entries, the state sets the go

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STATUS OF BEST MANAGEMENT PRACTICES (BMPs) IN MONTANA (Seminar Draft) (cont.)

SELECTED SOURCES OF NONPOINT SOURCE WATER POLLUTION, BY LAND USE	Most relevant information available on voluntary stewardship/low-impact practices in Montana	A Montana natural resource agency endorses/ distributes information on practices	Practices are a result of collaborative effort between agency and Montana land use community	Multi-Agency official endorsement/ encouragement of recommended land use practices	Training is available on the recommended set of voluntary practices	Voluntary practices are results-based, or regionalized	Some type of auditing or monitoring program exists for application of voluntary practices	Incentives to use the voluntary practices	BMPs are restorative, protective, or both	BMPs are required
CONSTRUCTION: - Urban/Suburban Development	• Montana Sediment and Erosion Control Manual • Best Development Practices (Florida example)	**Yes, for sediment/ erosion control** (DEQ).	**No.** (DEQ adopted WA state sed./erosion control specs.)	**Yes,** for sed/erosion control	**Yes,** for sediment/ erosion control. (DEQ)	**No.** (can be adapted to site-specific conditions)	Not for voluntary practices.	**None.**	**Both.**	- Sediment/Erosion control BMPs are required if a construction permit is required (disturbing 5 acres or more).
- Transportation	• (same as above) • Mt. Dept. of Trans. BMPs for erosion control (road and bridge specs.) • BMPs for road salts	**Yes,** for sed./ erosion and MDOT specs.	**No.** (see above for sed./ erosion control)	**Yes,** for sed/ erosion control and MDOT specs.	**Yes,** for erosion/sed. control and MDOT standards. (DEQ/MDOT)	**No.** (see above)	**MDOT inspections**	**None.**	**Both.**	- Contractual conditions only
- Stormwater	• Montana Guidance Manual for Controlling Stormwater Discharges, Vol. 2 (BMPs) • Montana Sediment and Erosion Control Manual	**Yes, for sediment/ erosion control** (DEQ).	**No.** (see above for sed./ erosion control)	**Yes.**	**Yes,** for sediment/ erosion control. (DEQ)	**No.** (see above)	Not for voluntary practices.	**None.**	**Both.**	- BMPs are required if a stormwater permit is required

[1] Nonpoint-Source water pollution is characterized by: (1) pollution is diffuse, (2) discharges occur by dispersed pathways, (3) discharge is generally associated with precipitation and runoff, and (4) discharge is related to man's use of the land (DHES, 1991).

[2] For land disposal entries, the state sets the goal, and provides technical guidance on options to reach that. Achieving the goal is mandatory, but there are choices as to method.

Note: A commentor on this matrix suggested a row be added for entries corresponding to "Public Facilities." It is unknown how this could be accomplished, given that public entities likely undertake or manage facilities corresponding to all row categories. A more feasible revision might be the addition of one or more columns (or the creation of a companion matrix) assessing what BMPs (if any) an agency applies for the listed land uses, where applicable. EQC staff did not have the information to make this revision during the 1997-98 Interim.

- Education needs to be provided,
- There needs to be funds to implement the measures.

Land Disposal:

- People need to get out in the field to help operators.

Construction:

- Operators need to know causes of problems,
- They need to install needed measures and monitor for effectiveness.

The following suggestions were made by the commentors:

- Education is critical, especially for rural subdivision owners;
- Keep funding Extension efforts;
- Technology needs to be improved;
- Agriculture needs to be kept viable in Montana;
- Avoid the "one size fits all" approach;
- Increase education and awareness of BMPs;
- Education needs to focus on the message that practices are affordable and that practices work;
- Funding should be provided to Montana Bureau of Mines and Technology for field education and publications;
- BMPs are needed for hobby miners;
- To change practices, reasons need to be given, not rules;
- Look at the "310" process as a model for protecting and restoring waterways.
- Look at "numbers" when determining whether BMPs work;
- Look at effectiveness of erosion control program (regulatory component of CD) in Lewis and Clark County;
- Improve education at the local level -- CDS are too busy with 310 and ordinance programs;
- Give credit to those doing well;
- Rural landowner BMPs would be helpful (for those with 1-5 acre holdings);
- Funding should be provided for the small, rural programs at DNRC;
- Provide broad support to varied educational efforts -- these help lay the foundation necessary to get to BMPs;
- Effectiveness monitoring is needed, as well as an iterative process based on the results;
- Provide support for education -- both publications, etc., and on-the-ground interaction -- extend these to other land uses;
- Monitor, to determine whether installation and effects are meeting water quality standards and statutory goals;
- Find BMPs that pay for themselves (e.g. pest "scouting");
- Collect economic data on economic benefits of BMP implementation;
- The Dillon EQC meeting would provide an opportunity to see BMPs implemented in the field;
- Coordinate information on BMPs across programs and industries.

After the conclusion of the seminar, the Council decided that its Subcommittees should emphasize BMPs within their work scope and that they wished to be updated on relevant efforts by others, including the Northern Plains Resource Council's efforts related to BMP effectiveness in the Yellowstone area. (EQC staff have not yet been successful in obtaining a summary of NPRC's evaluation criteria, or results.)

In May 1998 EQC staff received a request from one of DEQ's Outreach Coordinators that there was "a strong need" for BMPs related to stream modification permits (124 and 310 permits). During the last legislative session, a bill was introduced related to developing BMPs for 310 permits; it failed. During coordination for the EQC meeting in Dillon, Conservation District representatives complained of having to spend an inordinate amount of time traveling to review simple 310 applications, with less involvement over the types of streamside situations that contributed major amounts of sediment to stream systems.

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sediment reduction targets they have set for the basin. They are seeking to hire a part-time coordinator to try to develop approaches and help implement them.

There has been concern expressed at Statewide TMDL Advisory Group meetings over what level of BMP will be considered adequate in the TMDL program. The commentor noted that he had heard that some specific, aggressive level of BMP was feared (e.g. "turbo" BMPs). This is not an unusual interpretation, as at least one DEQ staff member interprets the term as requiring monitoring data showing beneficial uses are supported (see discussion above).

In response to the information provided in the July version of this writeup, one commentor questioned why the silviculture BMPs are touted as so good when there is still a lot of documented water quality impairment from forest practices. Another commentor responded to this statement by noting that the 303(d) list, once revised and updated will probably indicate less impairment from forest practices as had been indicated on previous 303(d) lists. Another commentor suggested using caution when considering changes to Montana's Nonpoint Source Management (NPS) Program through the state TMDL provisions. He stated that Congress has explicitly left it up to the states on how nonpoint source issues will be addressed, that Montana has an EPA-approved NPS Program, and that Montana is in compliance with the requirements of the federal Clean Water Act as to nonpoint source management. This commentor continued to note that the intent of those from the nonpoint source industries/activities who worked on HB 546 was to have the TMDL program "dovetail" with the NPS program; this will be the only manageable way to address the issue of nonpoint source concerns and the concept of TMDL development. If definitional changes are necessary, he suggested only those which result in this intent being clarified be considered.

Discussion at the EQC's August 4th Water Policy Subcommittee meeting included comments that voluntary measures are going a long way, especially with larger ranches and farms, as these owners are receiving information from NRCS and state agencies. A problem is with ranchettes; there are pamphlets for them, but getting them to the right people is a problem. Other discussions focussed on the potential benefits something like the "Code of the New West" (developed by citizens in Beaverhead County) might have in addressing issues related to newcomers' unfamiliarity with rural-related issues and policies in Montana. There was also discussion of MACD courses offered to realtors related to such issues.

Commentors on the draft report noted concern regarding less than effective sediment control measures on public lands, as well as pollution caused by public roads and highway maintenance activities, and dust created by use of streamside roads. The commentors suggested the EQC and Legislature address specific measures to decrease nonpoint pollution that occurs due to public agency actions. One commentor was specifically interested in learning how well water quality is protected on sites managed by the U.S. Department of Interior, noting the relationship this agency has with determining what private landowners must do to avoid prosecution for "take" under the Endangered Species Act and suggesting that federal agency sites should be managed to a higher water quality protection standard than privately owned lands.

DEQ's Position. DEQ staff state that the definition of "reasonable, land, soil, and water conservation practices" is tied to protecting beneficial uses. The connection to beneficial uses is important in the context of TMDLs, since a TMDL is required to achieve water quality standards and restore beneficial uses. As discussed above, a set of standard BMPs have been developed for source categories such as agriculture and silviculture and it probably would be advantageous to develop BMPs for other categories. It is important to understand that even established BMPs will continue to evolve with new methods and technological advances. In addition, BMPs need to be tailored to the individual watershed.

The department anticipates that standard BMPs (tailored by local groups and landowners for the watershed) will be sufficient to achieve water quality standards and restore beneficial uses for the vast majority of impaired water bodies. Therefore, in most cases BMPs will constitute "reasonable, land, soil, and water conservation practices." However, in a few cases, effectiveness monitoring may indicate that additional strategies are needed to achieve standards and restore beneficial uses. In these cases, the department will work with local Conservation Districts, watershed advisory groups, landowners, and other interested parties to revise the watershed management plan or TMDL. Although some might label these as "turbo BMPs," the department believes that is clearly an overstatement. The department considers the additional measures to be simple improvements or enhancements to existing BMPs and are likely to be applied on a very limited number of impaired waters.

Any change in definition that eliminates the requirement to achieve water quality standards and restore beneficial uses would be contrary to the purpose of the TMDL program. Such a change in definition could, in some cases, require point sources to assume an inequitable portion of the clean up costs or the water body would remain impaired.

Potential Policy Issues:

- There remains some confusion regarding how the TMDL statutes incorporate consideration of BMPs (e.g., general nonpoint water pollution reduction practices), and how that relates to the term "reasonable land, soil, and water conservation practices." Is this confusion resolvable through a common and publicized interpretation? What level of concern exists regarding the terminology used and referenced in HB 546? Should "reasonable land, soil, and water conservation practices" be defined in statute?

- Whether or not the definitional question noted above should be pursued, the TMDL legislation envisions DEQ putting effort into developing and promoting a "system" of practices. How is this being fulfilled? On a site-specific basis, or water body-specific basis? Or is there effort on a broader basis to improve the practices as they are currently applied? (See DEQ response.)

- Is there a role for the Subcommittee and/or Council in this area? Does the Subcommittee/Council wish to respond to DEQ's specific request for assistance in developing BMPs for 310 permits?

- The department's position related to BMPs appears to presume that local watershed groups would take a selection of standard BMPs (that do not yet appear to be aggregated anywhere in a useful fashion) and tailor them to their needs. It is unclear whether this supposes that DEQ's BMP program envisions a high level of technical assistance from DEQ staff to help local groups determine what level of BMPs are necessary to restore beneficial uses.

Subcommittee/Council Recommendations:

- The Subcommittee recommends that appropriate entities work with the land user groups to enhance development of realistic and practical BMPs for voluntary application within their industry. BMP development/refinement should be followed up with an informational effort on: purpose, area applicability, and economic and environmental benefits.

- The Subcommittee recommends public agencies set an example for others by adopting BMPs for potential nonpoint source pollution generating facilities and activities.

- DEQ's planned update and revision of their NPS Management Plan provides a unique opportunity to fulfill an EPA mandate (to update the Plan) and be creative in working with stakeholders to further research, develop, and describe voluntary BMPs for nonpoint source land uses. The department should check on whether such plans could take the format of individual "guides" to nonpoint source pollution generators. If so, the department should develop helpful technical and informational guidance materials to both fulfill the federal mandate, as well as fulfill the HB 546 mandate to develop and support a system of reasonable land, soil, and water conservation practices.

- The EQC should work with others to document what incentive programs exist in Montana and elsewhere for implementation of nonpoint source BMPs (beyond those incentives documented for the EQC BMP mini-seminar). There are a number of programs available in Montana, where assistance is provided only if appropriate conservation practices are utilized. There are also innovations in other states; for example Utah's Agricultural Resource Development Loan Program which offers low-interest loans for voluntary BMP implementation associated with agricultural lands. Any information generated on incentives could be incorporated into the BMP information documented for, and provided to, landowners as part of the NPS Plan update (see preceding recommendation).

Interagency Coordination

Background:

In 1995, top officials of 22 agencies (via a Memorandum of Understanding, or MOU) adopted a "framework for cooperation to sustain ecosystems, watersheds, and communities in Montana." Their agreement states, in part:

> local people play an important role in managing watersheds and ecosystems . . . one of the responsibilities of government is to provide them with the appropriate tools, technical assistance, positive incentives, and resources to accomplish this task.

Specific components of the agreement included:

- It created the Montana Interagency Coordinating Group, made up of the 22 signatory agencies and groups, which is to review the MOU at its annual meetings to determine whether it should be modified or updated.

- Unless terminated or extended, the MOU will expire July 1, 1999.

- It committed agencies to the broad goals of exchanging information, sharing resources, and cooperating, while recognizing varying program directives. It also committed the signatories to supporting the accompanying "Framework" document and its implementation strategy.

- It acknowledged that Montana's Watershed Coordination Council will play a valuable role in pioneering "a better future for Montana and Montanans."

This MOU and the Montana Watershed Coordination Council (MWCC) are commonly referred to when agency representatives discuss watershed-related interagency coordination in Montana. According to a

recent report from the Governor's Office staff, however, it is unknown whether the Interagency Coordination Group has fulfilled the commitment to meet annually, nor has the Office taken a position as to whether the MOU should terminate, be extended, or be modified before it expires in 1999.

The Montana DEQ, with its expanded role in TMDL development has discussed the challenges of interagency coordination in several arenas. With facilitation funding provided by the EPA, the DEQ, EQC, MWCC, and the Statewide TMDL Advisory Group co-sponsored a meeting in March 1998 to discuss water quality-related interagency coordination in Montana. Several programs presented their mandates, goals, and progress, and some discussed how they prioritize their projects. Although there had been a proposal to discuss some relatively "formal" coordination schemes in other states, the discussion focussed upon Montana's current coordination structure, via the MOU, MWCC, and Conservation Districts. It was unclear from the discussion whether attendees felt that Montana's existing structure was adequate to address future challenges, but there was hesitancy to discuss a "new" structure.

Due to the Subcommittee's interest in promoting interagency coordination in Montana, and HB 546 implementation-related challenges, the Subcommittee requested an update from the Governor's Office on the status of the interagency MOU; whether the commitments and goals in it were being fulfilled and whether improvements could be made in its commitments or implementation.

Ms. Lapeyre of the Governor's Office coordinated with the five Montana signatory agencies to provide a state response to these questions to the Subcommittee at their June 1998 meeting. In her response, she noted that the Administration "remain[s] in support and [is] committed to the goals, guiding principles and processes outlined in the . . . MOU. The framework established by the MOU is reasonable and logical, and describes an appropriate way for governmental agencies to conduct business with each other and the public." She provided several examples of projects undertaken "in the spirit but not under the auspices of the MOU," including; bull trout watershed working groups, the Upper Yellowstone River Task Force, and the Westslope Cutthroat Steering Committee. She noted that the MOU serves as "an umbrella agreement which sets goals and objectives" for interaction related to watershed issues. The memo concluded with the following:

> If we re-review what the parties agreed to under the MOU and the actions which are currently being taken by the five state agencies, we can demonstrate we are developing and sharing information; we are working more closely together to share available resources; we are carrying out activities to meet the purpose of the MOU; and the Montana Watershed Coordination Council and GIS Steering Committee are active within state government.
>
> Having mentioned this, we believe we must continue to improve our efforts to coordinate activities. This goal is not unique to watersheds, it is applied to all components of state government. A continual review of our actions and how to improve the inter-working of government is appropriate and constructive. Therefore, if you or other members of EQC have any suggestions on ways to improve coordination, we would greatly enjoy hearing them so they may be taken into consideration. (J. Lapeyre, Memo to Water Policy Subcommittee Co-Chairs, June 24, 1998)

At the August 4th Water Policy Subcommittee meeting, the current Chair of the Montana Watershed Coordination Council (see discussion below) commented that he coordinated a meeting with Governor's Office staff to discuss a potential gathering of the MOU signatories to revisit the MOU. He is also drafting a "Talking Paper" on the topic (presumably to present to the MWCC at their October meeting).

In a related effort, the MWCC is drafting a Work Plan to provide a strategy to its efforts and recently completed its first draft. The stated purposes of the Council are as follows:

1) To encourage local people to take a proactive, collaborative approach that will address natural resource issues. Assistance to local planning groups will be provided upon request to help them achieve their goals.

2) To serve as a statewide coordination network for Montana's natural resource agencies and private organizations to share resources, identify and capitalize on opportunities for collaboration, and avoid duplication of efforts. The Council will foster coordination, communication, and cooperation rather than set policy or usurp any organization's authority or responsibility.

3) To serve as a forum that establishes a strong link with local watershed groups needing assistance to help enhance, conserve, and protect natural resources and sustain the high quality of life in Montana for present and future generations.

A Coordination Council Chair is elected every two years, but membership on the Council is open to whomever wishes to attend the quarterly meetings. The Council is not recognized in statute or Executive Order, nor does it have a budget. Attendees attempt to mobilize resources as needed to support Council activities and proposed services. The Council has been relatively productive recently, which, some believe, is in contrast to the past. As one "Action Item" in their first-ever (Draft) Work Plan, the Coordination Council recommended:

> On an annual basis, the Council will summarize its progress, and report needs and recommendations, to the Montana Interagency Coordinating Group (or another entity, if this group continues to be defunct). (Action Item #3, MWCC Work Plan Draft, July, 1998)

Some MWCC members acknowledge the Council might benefit from reevaluating its organization (including a host of working groups attached to it), to see if some reorganization could help it function more efficiently. The Council has no independent budget, but one purpose of their Work Plan is to strategize on projects that need some resource commitment to accomplish.

Other water-related mandates (notably bull trout listing and fishery conservation and restoration in general) and limited agency budgets are challenging Montana to be as efficient as possible with limited funds. Mandates between programs have overlapping components. DEQ staff are attempting to better coordinate programs (on a watershed basis) within their agency, and they are coordinating with other staff on a program- and project-specific basis, where practical and where time allows.

Another recent coordination effort involves the state's response to the federal Clean Water Action Plan. According to DEQ staff, under the Action Plan, state and federal agencies are to compare their priorities and identify a list of watersheds that are "high priority" for all or most of the agencies. The agencies are then directed to develop a unified watershed assessment for these watersheds. The department and many other agencies are proceeding slowly on the Clean Water Action Plan until more is known about the level of funding and associated requirements. Also, the watersheds identified for unified watershed assessments will not be identical to the priorities for any of the state and federal agencies. Each agency will need to evaluate the impacts of this dichotomy. For example, DEQ will need to consider how the unified watershed assessment priorities mesh with the TMDL priorities being developed by the department and the Statewide TMDL Advisory Group (STAG).

Potential Policy Issues:

- Is there an advantage to further discussing enhanced interagency coordination schemes for water-related programs in Montana? Is there any reason to evaluate whether the Interagency MOU should

expire, be extended, or be modified, before its planned expiration in 1999? Is the current interagency coordination framework in Montana functioning sufficiently well to accommodate current and upcoming challenges? Are there some "turf" issues, resolution of which could benefit budgets, resources, and the public? Are there reasons to explore some examples from other states regarding interagency coordination? Is the Montana Watershed Coordination Council the appropriate entity to spearhead this type of inquiry? Is there a suggested role for the Environmental Quality Council, or some suggestions that can be made for legislative or future EQC consideration?

- DNRC staff help local groups conduct watershed planning, which generally covers water quantity issues, but also weeds, wildlife predation, some water quality concerns, and other topics broader than those that would be specifically related to TMDL development. What is the appropriate relationship between local watershed planning efforts and DEQ's water quality improvement planning efforts? How can TMDLs be developed without eclipsing the broader efforts and diverting attention from other local community goals?

- Should the Montana Watershed Coordination Council be formalized in statute or otherwise? Attendees at Council meetings have not agreed, and there are many that feel "another layer of bureaucracy" is not desirable, but it keeps getting suggested. The impetus for the suggestion, it appears, is the need for the Council to increase its legitimacy so that attendees will commit to attend and contribute, and so that agency heads will allocate funding when requested by their Council representatives. Are there ways other than MWCC formalization that could accomplish the desired objectives of good attendance and contribution and agency financial support of MWCC products?

Subcommittee/Council Recommendations:

- Rather than taking a position on whether the MOU should be extended, the Subcommittee recommends the next Council participate as any other signatory to that MOU. This means others will determine whether or not it should expire. If it did expire, and the Watershed Coordination Council still wished to report annually to a relevant entity, the next Council could provide such a forum. Given that the MWCC wishes to report its progress annually, one set of reporting could be done at the biennial Watershed Symposium (presuming these continue), and another to the EQC (resulting in biennial reporting to each).

- Where timely, the next EQC should request continued updates from agency staff on the progress being made on Montana's involvement in the federal Clean Water Action Plan, and what positive or negative effects it might have on interagency coordination in Montana. At the same time, they will request an update on any expected relationship (or "strings") the Plan process results might have on Montanan's ability to access 319, EQIP, CRP, or other funding programs, and when more might be known about this. The Council could discuss any appropriate action, based upon the information provided.

- The Subcommittee supports the efforts of the Montana Watershed Coordination Council, and encourages state agencies to dedicate the necessary staff and resources to accomplish Council goals and products. The Subcommittee encourages the completion of specific products and/or services important to Montana (e.g. a biennial watershed symposium, watershed group directory, watershed home page on the Internet, directory of funding sources, annual evaluation and reporting of their efforts, etc.).

- Further EQC oversight of the TMDL program (now and next Interim) should focus on seeing that the program is run efficiently and effectively. A positive first step in this type of oversight would be an examination of the extent of duplicative efforts related to water quality and watershed projects.

Interaction with Tribes/Other States

Background:

General Water Issues. These issues arose in the context of a larger issue: What is the state's policy with respect to its relationships with Indian tribes regarding water? This issue was discussed at the March 12, 1998 Water Policy Subcommittee meeting. A concern expressed by a tribal member was relayed to the Subcommittee. The tribal member noted that the State of Montana's approach to tribes with respect to water issues is inconsistent; negotiation of water rights is encouraged, yet the state filed a lawsuit against the Confederated Salish and Kootenai Tribes over water quality standards. The Subcommittee noted that state law addresses interactions with Indian tribes regarding water *quantity*, but not water *quality*. (Compact Commission staff have heard concerns along these lines as well.)

The Montana Legislature has established a policy for the state with respect to addressing water rights. Section 85-2-701, MCA declares the Legislature's intent that the state proceed in an effort to conclude compacts for the equitable division and apportionment of waters between the state and its people and Indian tribes. It is the Governor's policy to approach tribes in Montana on a "government-to-government" basis (i.e. as in approaching another state).

The state does not have a policy articulated in law for interacting with tribes on water quality issues. The EPA has jurisdiction over waters in Indian Country. The EPA can delegate the authority to establish water quality standards within Indian reservations to eligible tribes.

The State of Montana recently asked the U.S. Supreme Court to hear a case regarding whether the Confederated Salish and Kootenai Tribes have the authority to set water quality standards for both tribal and nontribal entities on the Flathead Reservation. In its petition, the Attorney General contended that a federal appeals court incorrectly granted the Tribes a status equal to that of the state in issuing water quality regulations governing activities of nontribal members, including political subdivisions of the state, on fee lands within the boundaries of the Flathead Reservation. At least 44 percent of the land within the Flathead Reservation is owned by nontribal members or by state governmental entities. The Court declined to hear the case, thereby upholding the lower court's decision.

It should be noted that this lawsuit addressed the Tribes' authority to regulate nontribal entities and did not challenge their authority to adopt water quality standards for tribal entities. The Tribes have adopted water quality standards for the southern portion of Flathead Lake and have worked cooperatively with the state to regulate water quality.

According to Attorney General Joe Mazurek, the state felt that cooperation and negotiation was the best approach and had proposed sharing water quality management authority with the tribes. However, the EPA rejected the state's proposal and the state decided to pursue the lawsuit.

There are existing mechanisms for coordination among multiple entities. A *Memorandum of*

Understanding Establishing a Framework for Cooperation to Sustain Ecosystems, Watersheds and Communities in Montana (MOU) was signed by 23 local, state and federal agencies in 1994. The framework states that participation by Native Americans in the Interagency Coordinating Group should be sought. The U.S. Bureau of Indian Affairs and the EPA signed this agreement; however, it has not been signed by any of the tribes in Montana. (EQC staff are unaware whether tribes were invited to sign the MOU.)

The Montana Watershed Coordination Council Operating Guidelines list tribal governments as members of the Council. Tribal representatives have occasionally participated in Council meetings.

Implementation of HB 546. HB 546 does not address interactions with tribes. Since watershed boundaries do not coincide with reservation boundaries, a stream or lake may fall under the jurisdiction of both the state and the U.S. Environmental Protection Agency (EPA) or eligible tribes. The EPA and eligible Indian tribes have the authority to identify water bodies in need of TMDL development and to develop and implement TMDL's for water bodies in Indian country. The EPA has yet to develop guidance for addressing these water bodies or criteria regarding program authorization for tribes. In the interim, the EPA will be responsible for TMDL development for waters in Indian country.

States have two options for developing TMDLs for water bodies in situations when more than one entity has jurisdiction (e.g. tribes, other states, etc.):

1) Request that the EPA develop the TMDL.
2) Develop the TMDL cooperatively.

The DEQ is cooperating with tribes on several TMDLs including Flathead Lake and the Missouri River below Fort Peck Dam. For example, the Flathead Basin Commission (Commission) has developed and adopted a proposed TMDL strategy for Flathead Lake. (The TMDL has not yet been approved by EPA.) A representative of the Confederated Salish and Kootenai Tribes is a voting member of the Commission. The Tribes have also been active in seeking grant funds to pay for implementation of the TMDLs. The Commission does not have a specific agreement with the EPA or the Confederated Salish and Kootenai Tribes regarding TMDL development.

HB 546 requires the DEQ to establish a statewide TMDL advisory group. The law also requires the DEQ to work with local watershed advisory groups in the development of TMDLs. The law specifies interests that must be represented on each of these groups. Tribes are not specifically included.

Tribal Comments on Draft Report. The EQC's Water Policy Subcommittee requested staff to solicit comments from tribal representatives in Montana on this topic. In response, staff sent copies of the draft of this policy consideration writeup to both tribal chairs, and natural resource program managers, of all Indian Reservations in Montana. A letter accompanied the writeup requesting comments by phone or in writing. One set of comments were received, from the Fort Peck Tribes (Assiniboine and Sioux), which included the following points:

- Coordination and cooperation is the only way to effectively develop and implement TMDLs anywhere in Montana whether or not they are on an Indian Reservation.
- The commentors believe that the government-to-government basis for cooperation ensures effective dialogue with the Fort Peck Tribes (Assiniboine and Sioux).

- Regarding TMDLs specifically on shared water bodies, the TMDL should incorporate the Tribes' standards and ensure that it will meet them if implemented. If the EPA is requested to develop the TMDL, they will use Tribal standards for its development. At Fort Peck, the Tribes' standards are more stringent than state standards and also include biological criteria. Therefore, development of any TMDL would by necessity, be a cooperative effort.

- For water bodies entirely within the exterior boundaries of the Reservation, the Tribes have the lead in the development of those TMDLs. It should be pointed out that our Tribal data does not indicate impairment on one of the water bodes identified by the DEQ, which lies entirely within the boundaries of the Fort Peck Indian Reservation. Therefore, a Tribal 303(d) list may differ from the state list.

- [To] resolve these differences would be an excellent reason to develop a State/Tribal Coordination Council. From this structure, TMDL coordination could evolve as well as other issues. Of course, all of this effort will start with a policy. If Tribes and the State are going to really commit to cooperation, a different approach must be used to encourage tribal participation. The Fort Peck Montana Compact Commission is a good example of true government-to-government effort reflected in a formal organization. The Tribes are not simply attendees at State meetings regarding water quality efforts, but are co-managers of the resource. As stated earlier, a number of commissions/councils already exist and perhaps these water quality coordination efforts could be incorporated under one of them, or the structure could be replicated for water quality. We would support any focussed effort to begin discussion of this important issue to both the State and the Tribes.

Source: Madison and Escarcega letter to EQC, October 23, 1998.

Other States. A commentor noted that the issue with state/tribal interaction is similar to state/state interaction, and suggested this section be expanded to reflect that. For example, waters may be impaired by upstream sources before they flow into Montana. There are also cases where state standards differ and the same water body is considered impaired in one state but not in the other. Intra-state topics are one reason EPA representatives have been involved in the water quality improvement efforts in the Clark Fork drainage.

Potential Policy Issues:

General Water Issues

- **State policy governing relationships with Indian Tribes regarding water.** The state does not have a policy governing its relationships with Indian Tribes regarding water quality issues. Should the state develop a policy? If so, how should it be developed?

- **Coordination and cooperation between the State and tribes on water issues.** Some mechanisms for cooperation and coordination already exist. However, cooperation and coordination is inconsistent. The state could consider enhancing or improving the existing mechanisms or establishing a new one. In March 1998, the EQC's Water Policy Subcommittee discussed the possibility of enhanced dialogue between state and tribal representatives.

Implementation of HB 546

- **Coordination and cooperation in TMDL development and implementation.** The process for interacting with tribal governments in TMDL development has not been established in state law.

Representatives of tribal governments are not required to be included in either the statewide TMDL advisory group or watershed advisory groups. In practice, DEQ promotes the inclusion of all affected interests, including tribes, in TMDL development. Should the state clarify how it will interact with tribes in TMDL development?

Subcommittee/Council Recommendations:

- The Subcommittee supports enhanced coordination with tribes in Montana, on a government-to-government basis. They encourage enhanced coordination without creating new governmental entities. The next EQC should direct its staff to further evaluate this topic, and potential enhanced or new state/tribal or state/state coordination mechanisms. This evaluation should include consultation with the National Conference on State Legislatures, the Legislative Council on River Governance, and the EPA's national tribal water quality advisory group, for ideas on enhanced on TMDL development and water quality management in general.

Implications of the Lawsuit

Background: In 1997, Friends of the Wild Swan, along with four other citizen environmental groups, filed a lawsuit against the U.S. Environmental Protection Agency (EPA). The suit alleged that the EPA violated the federal Clean Water Act (CWA) by:

1) failing to promulgate a list of threatened and impaired waters for the state of Montana, when Montana did not meet the appropriate deadlines to file such a list; and

2) failing to promulgate Total Maximum Daily Loads (TMDLs) for each body or segment of water on the "section 303(d) list", as required by the CWA when a state has not made progress toward setting TMDLs.

The suit also alleged that the EPA violated the federal Administrative Procedures Act by approving deficient section 303(d) lists submitted eventually to EPA by the state of Montana. The lists were deficient because they represent assessment of only a fraction of Montana streams and fail to identify all threatened and impaired waters.

The lawsuit requested the court to issue a declaratory judgment that EPA is in violation of the CWA with respect to section 303(d) lists and TMDLs for the state of Montana. The suit also requests the court to mandate EPA to identify and prioritize a section 303(d) list of all threatened and impaired waters in Montana and to establish TMDLs for those waters on the list within three (3) years from the date of judgment.

As of August 4, 1998, both sides in the case had filed motions for summary judgement; the deadline for those to be submitted was August 10th. Responses were due in September, and the judge will rule after that on those motions. If the judge denies the motion for summary judgement of either side, he has determined there are enough issues of fact that the case needs to go to court. That ruling would not be likely to come out until late this 1998 or early 1999.

When the TMDL lawsuit was filed, the 1997 Legislature was in the process of drafting and approving HB

546 -- legislation establishing water quality assessment and TMDL development directives to meet the requirements of CWA section 303. HB 546 became effective on May 5, 1997.

According to DEQ staff (as of fall 1998), the Deep Creek TMDL had been submitted to and approved by the EPA. The department had also submitted to the EPA a TMDL for Elk Creek near Noxon and the Clark Fork Voluntary Nutrient Reduction Plan (as a TMDL). In addition, over 100 point source TMDLs had been submitted to the EPA and many approved. The department was also working on packaging approximately 10 nonpoint source (319) projects as TMDLs and submitting them to the EPA by the end of 1998.

What are the implications of the TMDL lawsuit, especially in light of Montana's new statute addressing water quality assessment and TMDLs? As of August, 1998, 33 states have been involved or soon will be involved in TMDL lawsuits. Of these states, TMDL lawsuits were pending in 14 states (including Montana); notices of intent to sue had been filed in 5 states; and TMDL lawsuits had been dismissed in 3 states. In the remaining 11 states, the EPA was under court order to establish TMDLs if the states did not establish TMDLs according to a court-approved schedule. (See **Appendix L** for a national comparison of all TMDL lawsuits known to EQC staff, as of August 1998.)

Based on a review of the 11 cases resulting in a court-approved TMDL schedule, the implications for Montana appear to be the following:

1) If a court finds "constructive submission of no TMDLs," this triggers a mandatory duty for the EPA to establish TMDLs for the state. Yet, courts have been very reluctant to do this. Such a finding exists only for the state of Alaska where the state had not completed "even the first stage of the TMDL process" and did not indicate any interest in doing so in the future.

Because Montana (a) has submitted section 303(d) lists for 1992, 1994, 1996, and 1998, (b) has developed over 100 point source TMDLs, one nonpoint source TMDL, and is currently working on other TMDLs, and (c) has enacted strong TMDL legislation, the state has a good chance of retaining primacy over its TMDL development and promulgation.

2) In ten of the eleven TMDL lawsuits resulting in court-approved TMDL schedules, the state subject to the suit has retained primacy over promulgation of its section 303(d) list and TMDL development. The EPA retained an oversight and guidance role and will gain primacy over a TMDL program only if the state does not establish TMDLs by the court-approved schedule of deadlines. Schedules for TMDL establishment range from four and one-half years to twelve years.

If the plaintiffs in Montana's TMDL lawsuit successfully challenge the EPA, Montana will likely fall under a similar arrangement as other cases--where the state must establish TMDLs according to a court-approved schedule and the EPA will retain an oversight and guidance role. At this point, it is unclear what time frame the court would consider reasonable for establishing TMDLs in Montana. The court may defer to the ten-year schedule set out in the TMDL statute at MCA section 75-5-703(3), or may set a more accelerated schedule.

3) In the long term, the most important issue with respect to TMDLs is that concrete progress is actually made toward TMDL development and sufficient funding is allocated to a TMDL program. Even if the plaintiffs in the TMDL lawsuit do not succeed, the state of Montana will be under careful scrutiny from the EPA and watchful citizens groups to ensure that Montana's TMDL legislation is

being followed.

4) The plaintiffs in Montana's TMDL lawsuit may amend their complaint at any time (even during trial), provided the court grants them leave to amend. In the past, courts have been fairly generous with granting leave to amend a complaint if the amendment is within the scope of the cause of action of the original complaint.

A commentor suggested that what the EQC says, does, and writes (regarding the TMDL program) be closely reviewed by the state's counsel in the TMDL lawsuit. (Note: Early this year, EQC staff conferred with DEQ's Chief Counsel, EQC counsel, and the Legal Director of Legislative Services regarding potential concerns over EQC conducting oversight on a program that is directly related to pending litigation. Their advice was incorporated into the Subcommittee process, and staff continued to be as sensitive as possible to this issue. Also, as noted in Appendix K, a copy of this policy consideration writeup (and others) was forwarded to DEQ's Legal Counsel for comment. Any relevant comments received were incorporated.)

Potential Policy Issues:

- Though the DEQ is still early in its implementation process, are there ways Montana could improve its progress toward TMDL development and promulgation? Short term? Long term?

- Has Montana allocated sufficient funds to fully implement TMDL development, promulgation, and monitoring? Are those funds being effectively used, to both provide an effective program and facilitate defense of the state program in the lawsuit? (DEQ Response: The TMDL program is an expanding program with gradually increasing costs for the first ten years and decreasing costs after that. The Legislature will need to fund these increases in order to implement the proposed program. It is still too early to determine whether the initial funding predictions will be adequate. One concern that was voiced during the 1997 legislative session and continues to be voiced is; there is insufficient funding for conservation districts and watershed advisory groups to participate in the process and develop and implement homegrown watershed management plans and TMDLs. The department acknowledges that several million more dollars could be put to good use in this area. However, such a funding level is not realistic. The department is cautiously following the progress of the Clean Water Action Plan in Congress with hope that the Plan will provide a substantial increase in funding for conservation districts, watershed advisory groups and the department.) (See also the discussions "Funding, Its Use, and the Role of 319 Funds" and "Local Funding for Implementation," later in this document.)

Subcommittee/Council Recommendations:

- The Subcommittee suggests to DEQ that they consider adding a column to the state's 303(d) list to display "Status of Water Quality Improvement Efforts" (or the like). Currently, state progress on TMDL development is only reflected in the 303(d) list after EPA TMDL approval allows that water (or an impaired parameter of it) to be removed from the list; and the list is only published every two years (possibly less in the future). This misrepresents Montana's progress in developing TMDLs that are not yet approved. Since the list is now available on-line, such information would allow the list to

be kept current and be more reflective of TMDL progress in Montana. Entries might be as simple as noting which stage the effort is in (e.g. "getting started", "assessment", "planning", or "TMDL for ____ (name of water body) ____ approved -- to be delisted in ____ (date to be delisted) ____"). If there were only a few major categories for entries, it should not raise too much concern about extra staff time required to input. This might also serve to encourage others to get started on TMDL development, if they see others are progressing.

- The Subcommittee recommends the next EQC consider continued updates on the status of the TMDL litigation in Montana, as well as other litigation regarding water quality.

Local Involvement vs. Mandatory Timeframe

Background: The roles and responsibilities envisioned in HB 546 are intertwined and, subsequently, complex. A summary of what appears to be envisioned, from a literal interpretation of the bill, is provided in the figure beginning on the next page. As shown, a literal interpretation of the bill shows DEQ as the entity receiving the bulk of the direction and mandates. Local entities (Conservation Districts and invited and other interested persons) are described in a consultation role.

The mandates of HB 546 are being implemented by the DEQ via two bureaus. According to the DEQ's *Schedule for the Development of TMDLs* (submitted to the Legislature, via a presentation to the EQC on May 7th, 1998), the Monitoring, Assessment and Data Management Bureau is handling the requirements related to the data and decisions needed to manage, update, and submit the 303(d) list to the EPA. They are also dealing with the data management system, developing criteria for what type and level of data are required to list a water body, determining the relationship between water quality standard exceedences and support of beneficial uses, and responding to petitions to list/delist/or reprioritize waters.

The Resource Planning Bureau of DEQ developed the TMDL implementation schedule and has taken responsibility for developing and implementing a communication/information strategy for the program, developing TMDLs, and managing the DEQ's portion of the federal grant program for nonpoint source pollution (NPS) control projects (the 319 program).

Both bureaus will collaborate on the tracking of TMDLs, the prioritization of water bodies, public involvement in ranking and prioritization, and the development of a list of waters for site-specific water quality standards.

Recognizing that any changes in land use required to improve water quality may best be facilitated by decisions at the local level, DEQ's approach to TMDL development has been to advocate a process that "encourages local leadership in the development of water quality plans, offers as much individualized technical assistance as possible, customizes flexible solutions for each individual watershed, and delists water bodies when an approved plan is being implemented."

DEQ's *Schedule* envisions the development and department approval of 100 TMDLs for listed waters by October of 1999, 300 more by July of 2003, and another 400 by July 2007. As of this writing, TMDLs for one water body (Deep Creek) have been submitted and approved by the EPA. EPA staff note that over 100 point-source-related TMDLs have been approved by the EPA (associated with MPDES permits). They add that Montana is continuing to make substantial progress in completing point-source-based

Roles and Responsibilities for HB 546 Implementation, by Entity	
Who...?	**Is Supposed to Do What...?**
Montana Department of Environmental Quality (DEQ):	a. monitor state waters to assess quality b. identify waters that are threatened or impaired c. review and revise the 303(d) list and priorities at least every 5 years d. develop and implement a method to prioritize TMDL development for listed waters e. make information available to the public f. review and make determinations on requests to add/remove/reprioritize listed waters g. provide for public comment on actions "c" and "f" h. consult with Conservation Districts and watershed advisory groups during actions "c" and "o" i. develop (by 10/1/99) and maintain a database to assess data used in the listing and prioritization processes j. use the database in "i" to delist water bodies lacking sufficient credible data k. monitor and assess (the next field season, or ASAP) any waters delisted via "j" to determine if threatened or impaired l. establish and consult with Statewide TMDL Advisory Group (STAG) during "d"; solicit, document, and consider public comment during deliberations m. validate data for any water bodies determined as "high" priorities for TMDL development n. develop TMDLs for threatened or impaired waters, in order of priority; by May, 2007, develop TMDLs for those waters listed in 1996 that are still on the list after action "i" is completed o. develop reasonable land, soil, and water conservation practices (BMPs) and assist and inform landowners about voluntary application of them; support a voluntary program of these practices to achieve water quality standards for waters with TMDLs p. develop a schedule (by 5/5/98) for completing "n" q. provide guidance for TMDL development on any listed water (regardless of priority), if resources are available to develop the TMDL and monitor its effectiveness r. review and approve/disapprove TMDLs s. provide assistance and support to landowners, Conservation Districts, and watershed advisory groups related to how to improve quality of a listed water and eliminate the need to develop a TMDL for it t. incorporate approved TMDLs into DEQ planning and discharge permitting u. develop a monitoring program to determine whether problems have been corrected and the long-term effectiveness of the control measures; if the TMDL is not effective within 5 years, determine if better BMPs are needed, more time is needed, or the TMDL should be revised v. continue to issue discharge permits on listed waters, if certain criteria are met w. request participation of representatives of 14 interest groups to work in an advisory capacity with DEQ and local Conservation Districts on "c", "n", and the development portion of "o", above x. set up meetings with watershed advisory groups (including persons other than those "requested" in "w") to review and revise the list and solicit new information (prior to meeting w/STAG), and to develop TMDLs

Roles and Responsibilities for HB 546 Implementation, by Entity	
Who...?	**Is Supposed to Do What...?**
Person requesting the addition/removal/reprioritization of a listed water (requestor)	a. provide information to support the request b. appeal to board if aggrieved by the department's decision on request
Persons requested by department to work with Conservation Districts to advise DEQ	(Note: These are persons whose participation is requested by DEQ to work in an advisory capacity with local Conservation Districts and DEQ in the areas noted below. Their participation is not mandated by the bill. These persons are to represent 14 different interest areas (somewhat similar interest areas as those represented by the STAG).) a. advise on "c", "n", and the development portion of "o", above b. meet with DEQ and local Conservation Districts within their affected geographic area to review and revise the list c. provide new information that may affect listing or priorities d. meet with DEQ in the affected geographic area prior to and during TMDL development; provide comments on developing the TMDL and information on sources that may be contributing to water quality impairment
Statewide TMDL Advisory Group (STAG):	a. advise the department on their consideration of 13 specific criteria in the development of a method of rating listed waters, to then prioritize them for TMDL development
Other groups of persons wishing to participate in revising and reprioritizing the list and in developing TMDLs	(Note: This definition is broader than for those persons "requested" to advise the DEQ and Conservation Districts pursuant to 75-5-704(1), but the potential role is the same. These persons, together with the "requested" participants, above, constitute "watershed advisory groups" as defined in the statute.) a. advise on "c", "n", and the development portion of "o", above b. meet with DEQ and Conservation Districts within their affected geographic area to review and revise the list c. provide new information that may affect listing or priorities d. meet with DEQ in the affected geographic area prior to and during TMDL development; provide comments on developing the TMDL and information on sources that may be contributing to water quality impairment
Local Conservation Districts:	(Note: Conservation District actions are not mandated by the statute; DEQ must "consult" with them, providing the following opportunities for District involvement) a. advise on "c", "n", and the development portion of "o", above b. meet with DEQ and watershed advisory groups within their affected geographic area to review and revise the list c. provide new information that may affect listing or priorities d. meet with DEQ in the affected geographic area prior to and during TMDL development; provide comments on developing the TMDL and information on sources that may be contributing to water quality impairment

TMDLs, and the state is committed to accentuated efforts in the TMDLs that are necessary to remove water bodies from the 303(d) list.

The DEQ's *Strategy to Improve and Protect Water Quality Using a Watershed Approach* (November 1997) describes a four-step process to developing and implementing water quality plans, with DEQ involvement provided on an "as requested" basis. The process applies to"groups interested in developing TMDLs". The process is described as follows:

Assessment	Groups interested in developing TMDLs can start with data that were used to put the water body on the threatened or impaired waters list. Or, local groups can supplement these data with water quality evaluations and monitoring of their own. Technical assistance is available from the DEQ and may also be provided by other agencies.
Planning	Develop a watershed water quality plan, using assessment data, agency expertise, landowner knowledge, and public input from other watershed residents. Set specific/ measurable water quality or habitat quality goals, target the most important sources of pollution, identify responsible parties (including any point sources), identify resources or funding, and set time lines.
Implementation	Use Best Management Practices (BMPs) or other methods to control pollution from the most important sources identified in the plan. Funding necessary for the BMPs can come from a variety of sources. The degree to which funding is found is often related to the strength of the partnership developed to assess and write a water quality plan.
Monitoring	Monitoring is critical to determine if water quality goals are being met. These data can be collected by agency participants or watershed residents. DEQ and other agency staff can provide technical assistance with this part of the TMDL process. If water quality goals are not met, the information can be used to revise the water quality plan, if necessary.

There appears to be strong and broad agreement that local involvement is the key to an implementable and successful water quality improvement strategy (and eventual de-listing of threatened and impaired waters). There may be, however, some lack of clarity (or inconsistency in communication) regarding roles, responsibilities, and resources for TMDL development (especially related to areas where the major players will be Conservation Districts and local residents) the resolution of which could speed TMDL development on a statewide basis.

As shown in the preceding figure, HB 546 charges the DEQ to "develop TMDLs" (among other roles) and provides opportunities for local involvement related to consultation, advising the DEQ, providing information and input. Some might say, however, that the program is being described with more responsibility placed on local entities than was envisioned by HB 546, including that HB546 is a "a voluntary bill," that TMDL development is "a voluntary, locally-led process," and "DEQ provides technical assistance, and the locals do the work." Granted, casual referrals to programs do not often match statutory language, and there are some implementation advantages to describing programs in a "friendly" mode, but the state/local balance described appears quite different than that documented in statute.

In some areas, the DEQ has taken leadership in conducting assessments; during the EQC's June HB 546 implementation tour, it appeared that local entities would conduct assessments, identify problems, etc., and the DEQ was available to help. (DEQ Response: Where a local group is interested in performing water quality monitoring or assessments, the department will provide technical assistance, but turn the

reins over to the group. In other situations, the local group may want the department to perform the monitoring. In the near term, the department must perform numerous assessments to facilitate the 1999 listing/delisting process.) It is unknown if the DEQ has produced guidance on how to conduct an assessment that would provide an adequate foundation for a potentially-approvable TMDL.

MACD representatives note that they intend to discuss with the DEQ the role of Conservation Districts in the TMDL program, including the process and roles related to listing and delisting of water bodies. They add that the TMDL topic has become important to districts.

DEQ staff noted that they are in the process of developing a TMDL information program, and expected to join with Conservation Districts to implement the program in summer and fall of 1998.

A commentor on this section provided an example of TMDL development in a local context with a state mandate. She noted that approximately 10 listed water bodies in the White River area of Washington State were addressed as a group, with all interested parties (including tribes) negotiating and deciding on the TMDL allocations for the White River. Professional mediators assisted with the process, and the agreement was recently signed. She noted that Washington was operating under a court-ordered timeframe, and the appropriateness of such a process would depend on the participants' willingness to engage in it, and the DEQ's ability to fund a major share of it.

(Note: Readers interested in this topic may also wish to review the discussion of "Local Funding for Implementation," found elsewhere in this report, which discusses areas where local or regional entities have taken on the responsibility for developing TMDLs, but have not received additional resources to do so.)

Potential Policy Issues:

- Has the state/local role in water quality monitoring, assessment, and TMDL development and implementation been appropriately defined and described to facilitate effective state movement toward meeting the 10-year TMDL development timeframe envisioned in statute? Are there opportunities for improvement? Is any difference between the roles envisioned in statute and the roles promoted in implementation acceptable, or should the statute be modified to reflect a different set of relationships?

- The approach to watershed advisory groups in the statute is a bit convoluted; could it be improved, or is it working just fine for the DEQ? Conservation Districts are concerned that formation of new groups outside the purview of the Districts is being promoted, when the groups that stay around the longest and get the most done are typically created or supported through Conservation Districts -- working through Districts should be promoted instead. Could the statute be improved to address this, or can these issues be worked out informally? Others express concern that Conservation Districts are not always broadly representative of the interests in their geographic area, especially in urban areas.

  (DEQ Comment: The department acknowledges that conservation districts are an excellent focus for TMDL development and will depend upon them in probably the majority of cases. Furthermore, many watershed groups will chose to use a Conservation District as the umbrella for their group to provide administration and financial management. However, in some cases other organizations such as the Tri-State Implementation Council are well-established and have demonstrated the ability to handle grant money and develop a TMDL. The department intends to also depend on such

organizations. . . . HB 546 was drafted with references to local watershed groups in recognition that, in many instances, local individuals will be organizing themselves in order to develop TMDLs in their local area. This is not meant to diminish the involvement of Conservation Districts in any way, rather to simply ensure that local involvement is completely provided for.)

Subcommittee/Council Recommendations:

- The next EQC should evaluate the progress of the fulfillment of the roles envisioned by HB 546 (see preceding figure), and whether the relationship between the state and local Conservation Districts is effective and efficient.

- When EQC oversight of HB 546 implementation began, one suggestion DEQ staff made was that EQC provide assistance in information and education. In this regard, EQC and DEQ staff have been coordinating since early 1998 on how the Subcommittee's *Oversight Report* could be crafted to both meet Subcommittee/Council goals, as well as provide an informational resource for future DEQ/EQC use. Presuming this continues to be the DEQ and EQC interest, the DEQ (and others) should provide further suggestions on how this effort could assist their informational efforts and contribute to clarifying state/local roles. It appears from the recent grant funding response from the EPA that the EPA's focus was on development of specific TMDLs, not on funding statewide informational materials. (Note: DEQ staff already suggested that EQC prepare a booklet on TMDL case studies -- this *Report* is intended to include 4 case studies, but more could be drafted over the 1999-2000 Interim given supporting resources, interest, and EQC/DEQ priorities.

Funding, Its Use, and the Role of 319 Funds in Program Implementation

Background: According to DEQ staff, Montana's Nonpoint Source (NPS) and Total Maximum Daily Load (TMDL) programs work together to improve water quality and insure that impaired water bodies meet water quality standards and that beneficial uses are restored. These programs consist of staff at the Department of Environmental Quality and a grant program to local conservation districts, watershed advisory groups, and other organizations.

Department staff are responsible for conducting water quality monitoring, assessment, and reporting; conducting 401 certifications and 3A authorizations for projects that affect lakes or streams; promoting nonpoint source compliance; providing outreach to conservation districts and watershed advisory groups to assist them in developing and implementing TMDLs; and providing administrative support. During FY 1998, the Department concentrated on hiring the 9 FTEs authorized by the 1997 Legislature, establishing monitoring protocols, defining sufficient credible data, developing criteria for assessing water quality standards attainment, establishing a schedule and work plan for TMDL development, appointing and working with the Statewide TMDL Advisory Group to develop a prioritization scheme for TMDL development, updating the 303(d) impaired waters list, processing petitions for delisting, outreach activities with conservation districts and watershed advisory groups and completing ongoing TMDLs such as the Clark Fork Voluntary Nutrient Reduction Plan and the Flathead Lake TMDL. Beginning in the summer of 1999, the DEQ's focus will shift to water quality monitoring and assessments and initiating and completing additional TMDLs. To accomplish these activities, the Department was authorized to spend $1,983,377 in state and federal funds for the FY1998-99 biennium.

The grant program consists of financial awards to conservation districts, watershed advisory groups, and other organizations to improve water quality or riparian habitat and to develop TMDLs. The grants provide funding to administer local watershed projects, conduct water quality monitoring, pay for sample analysis, perform watershed assessments, provide information and education on nonpoint sources and best management practices, evaluate the effectiveness of best management practices, develop watershed plans (TMDLs) and for on-the-ground implementation of the plans. About $1,584,000 of federal funds were initially available for the grant program during the FY 1998-99-99 biennium.

The Department recently awarded 7 grants to local conservation districts, 1 grant to DNRC, and 1 grant to the Montana University System under the Nonpoint Source program (319) for FY1998. The grants are for 3-5 years and total $667,214, as shown below.

Watershed Management Section Contracts, 1998

Project Name	Sponsor	Type*	Contract Amount
Forestry BMP Audits	DNRC	I&E	$17,700
Volunteer Monitoring II	Montana Watercourse	I&E	68,201
Teton River Watershed	Teton CD	WS	106,200
Sun River/Teton Ag. Chemical	Teton CD	WS	75,000
Rosebud/E. Armell Creek	Rosebud CD	WS	68,201
Canyon Creek - West Billings	Yellowstone CD	GW	120,000
Gallatin Septics/Subdivisions	Gallatin CD	GW	36,912
Central Montana Big Spring Creek	Fergus CD	GW	125,000
Yellowstone Task Force Grant	Park CD	Gov. Task Force	50,000
		Total	**$667,214**

* I&E = Information and Education; WS = Watershed; and GW = Ground Water

Source: DEQ, 1998.

In addition to 319 funds, the federal government provided to the DEQ $80,000 in federal 104(b)(3) funds in FY1998, which were allocated as follows to 7 of 12 applicants.

Federal 104(b)(3) Grant-Funded TMDL Projects, 1998

Project Name	Sponsor	Amount
Upper Clark Fork Basin TMDL	Upper Clark Fork Steering Committee	$5,000
Lower Missouri River CRM - TMDL	Lower Missouri/ McCone CD	10,000
Upper Shields TMDL	Upper Shields Watershed Assoc/Park CD	10,000
Careless Creek TMDL	Lower Musselshell CD	20,000
Prospect Creek TMDL	Green Mountain CD	12,000
Sun River TMDL	Cascade CD	10,000
Rosebud Creek TMDL	Mt. Bureau of Mines/Rosebud CD	15,000
	Total	**$80,000**

Source: DEQ, 1998.

Since 319 projects usually extend over a 3-5 year period, there are numerous active projects currently being funded out of prior year Nonpoint Source funds (319). A listing of ongoing projects that in many cases will lead to TMDLs is provided on the next page. The total dollar value of these ongoing projects is approximately $4.5 million.

Ongoing Watershed Management Section Contracts, 1994-97

Project Name	Sponsor
Watershed Projects (WS):	
Otter Creek	Sweet Grass CD
Big Spring Creek	Fergus Co. CD
Big Otter Creek	Judith Basin CD
Muddy Creek Watershed	Cascade Co. CD
Bullhead Implementation	Pondera Co. CD
Ruby River (RDGP)	Ruby Valley CD
Lower Missouri	McCone Co. CD
Bitterroot Watershed (RDGP)	Bitterroot RC&D
Duck Creek Stabilization	Teton Co. CD
Teton River Watershed	Teton Co. CD
Nevada Creek Watershed	N. Powell CD
Careless Cr. Watershed	Lower Musselshell CD
Big Spring Creek Phase II	Fergus Co. CD
Lake Creek Watershed	Cascade Co. CD
East Spring Creek	Flathead Co. CD
Ten Mile Creek TMDL	Lewis and Clark WQPD
Bitterroot Watershed Phase II	Bitterroot CD
Sun River Watershed	Cascade Co. CD
Deep Creek Watershed	Broadwater CD
Deep Creek II	Broadwater CD
Sun River Watershed Phase II	Cascade Co. CD
Sage Creek Watershed	Hill Co. CD
Ruby Watershed Project	Ruby Valley CD
Big Hole Watershed	Beaverhead CD
Big Otter Creek III	Judith Basin CD
Green Mountain Watershed	Green Mountain CD
Teton River Project	Teton Co. CD
Clark Fork - Pend Oreille	Bitterroot CD

Project Name	Sponsor
Monitoring Projects:	
Carroll College (RDGP)	Carroll College
Elk Creek Placer Mon.	Riparian Resources
Ground Water Projects:	
Flaxville Aquifer	Fort Peck Tribal Cncl.
Red River Ground Water	Glacier Co. CD
Greenfield Bench Ground Water	Teton CD
Gallatin Co. Septic Assessment	Gallatin CD
Information and Education Projects:	
Stream Management Guide	MACD
Capacity Building - MACD	MACD
Mini Grants	Central Mt. RC&D
Animal Waste Handbook	Land & Water
Agricultural Pollution Ed.	Big Sandy CD/MACD
Riparian Area Grazing Ed. Module	Gallatin CD
Know Your Watershed	Lewis & Clark CD/MSU
Project WET	Lewis & Clark CD
Lake Water Quality/Shoreline Prot.	Flathead CD
Project WET	MSU
Volunteer Monitoring	NRIS
MT Nonpoint Source GIS	NRIS
Riparian Workshops	MSU

Source: DEQ, 1998.

At the August 4th Water Policy Subcommittee meeting, attendees requested a matrix summarizing appropriation, budget, and expenditure information, and information on how federal 319 funding is involved. EQC staff coordinated with DEQ budget staff to provide the summary information in the table on the following page. For the FY1998-99 biennium, the program is funded with $2,618,611 of federal Nonpoint Source funds (Section 319 NPS) and $948,766 of State General Funds. At the time the Department provided this information, they were in the middle of the executive planning process and had not finalized the proposed budget for the FY 2000-01 biennium. Department staff noted they were unable to provide detailed program cost projections for future years, but they expect the TMDL program will continue to develop, with increasing costs over ten years.

The Department's expenditures for FY 1998-99 were well below the appropriation level. DEQ staff note that it took a substantial amount of time to hire staff, resulting in savings in personal services and operating costs. Now that DEQ is reaching full staffing levels, expenditures will increase. Additional increases in operating costs are projected due to travel (collecting samples, performing assessments, and Statewide TMDL Advisory Group meetings) and laboratory expenses for sample analysis.

Summary of FY 1997-1998 TMDL/319 Funding Information

NPS/TMDL Program -- Biennium:	
General fund appropriations	$948,766
Portion of 319 appropriated by Legislature to DEQ to "directly address TMDLs" (20.4% of total biennial 319 funds appropriated by Legislature)	$507,600
"NPS Staffing and Support" grant monies from EPA (also from 319)*	$527,011
Total biennium Legislatively appropriated NPS/TMDL program funds	$1,983,377
(Note: 319 funds represent 53.3% of the biennial NPS/TMDL program budget)	
319 Grant monies originally appropriated to DNRC in 1997) (targeted by 1997 Legislature toward benefitting impaired streams):	
319 portion appropriated by Legislature	$1,976,548
319 appropriation revision	134,463
(less "staffing and support" portion of 319 listed above)	(527,011)
Total grant-related 319 funds expected for biennium	$1,584,000
(Note: the project-related funds available account for approximately 60.1% of total 319 funds granted by EPA to Montana for FY 1998-99-99)	
Grand Total (General Fund (TMDL) + EPA 319 "NPS Staffing and Support" Monies + 319 Grant Monies for 1998-99 Biennium):	**$3,567,377**
NPS/TMDL Program Annual Info ($1,983,377 expected for biennium):	
FY 1998-99 Program Budget:	
General Fund	$444,832
319 (TMDL)	253,800
319 (NPS staffing/support)	375,000
Total FY 1998-99 TMDL-Related Program Budget	$1,073,632
FY 1998-99 Program Expenditures	
General Fund	$294,064
319 (TMDL)	178,000
319 (NPS staffing/support)	296,591
Total FY 1998-99 TMDL-Related Program Expenditures	$769,017
FY 1999 Remaining Program Appropriation	$1,214,360
319 Grant Funds ("to the ground") Annual Info ($1,584,000 expected for biennium):	
1998 319 Project Grant Monies Allocated in FY 1998-99	$667,214
Project Grant Monies Allocated in FY 1997	179,699
319 funds available for FY 1999	737,087

Biennial Budget Estimates** (does not include 319 "NPS staff/support" @ approx $750,000/biennium):

FY 98-99	FY 2000-01	FY02-03	FY04-05	FY06-07
1,456,366	1,718,660	1,810,953	1,840,644	1,851,056

Notes:

* The 319 NPS Staffing and Support funds are used for; (1) water quality monitoring, assessment, and reporting; (2) TMDL outreach; (3) administrative support; (4) 401 certifications/3A Authorizations; and (5) promoting NPS compliance. The latter two activities are carried out by DEQ's permitting/compliance divisions and account for about 32% of the use of these funds.

** From 10-Year Plan prepared in January, 1997.

Sources: EQC/DEQ staff, September 1, 1998.

Other Department Programs that Partially Support TMDL Development. The Department receives grants from EPA under Section 106 of the federal Clean Water Act for a variety of water quality activities. The Department receives approximately $495,515 annually which is used to determine the effects of proposed mines and energy development, review environmental assessments and environmental impact statements, develop and interpret water quality standards, conduct rulemaking, make nondegradation determinations, perform water quality monitoring, process water quality data, and provide for wellhead and ground water protection. Many of these activities indirectly support TMDL development.

The Department receives grants from EPA under Section 604(b) of the federal Clean Water Act to carry out water quality management and planning activities. The Department receives approximately $100,000 annually which is used to support statewide water quality status and trends monitoring, preparation of a biennial statewide water quality assessment report, and maintenance of a related water quality assessment data base. 604(b) funded water quality data collection and assessment activities contribute to the Department's development of the 303(d) impaired waters list.

As mentioned above, historically, the Department has also received special grants from EPA under Section 104(b)(3) of the federal Clean Water Act for various activities such as wetlands protection, water quality monitoring, and watershed management. Watershed projects in the upper and lower Ten Mile Creek and the Bitterroot drainages are currently being funded through Section 104 grants. These projects are locally managed and are expected to result in TMDLs.

Potential Additional Funding for the Nonpoint Source Program. The Department tracked the status of the President's Clean Water Action Plan as it progressed through Congress. The Department intended to submit a grant application to EPA requesting any additional funds for TMDL development. Congress supported an increase of $95 million in 319 funds. The 1998 enacted level of 319 funding was $105 million, so funding approximately doubled the previous amount of 319 funds available nationally, meaning an additional $800,000 to $1.1 million to Montana. Other water-related federal funds were proposed for increases as well.

According to EPA guidance associated with the Clean Water Action Plan, any state not submitting a "Unified Watershed Assessment" forfeited the ability to apply for any Plan funds, with the full increase divided among states that submitted Assessments. Montana submitted an Assessment and corresponding "Watershed Restoration Priorities" by the October 1, 1998, federal deadline. There appears to be a tie between new funding (i.e. over the "base" 319 funding) and "nine key elements" provided to states in 319 guidance in May 1996. EQC staff did not have access to this guidance at the time of writing.

Other State and Federal Actions Assisting TMDL Development. In addition to the Nonpoint Source and TMDL programs described above, the Department and other state and federal agencies have other programs and projects underway that directly or indirectly support the TMDL effort. Although, DEQ staff could not estimate the actual financial information for these projects, they identified many of the programs below:

1. **Department of Environmental Quality:** Conducts water quantity and quality monitoring and improves water quality and riparian habitat conditions through the following programs: (a) abandoned mines reclamation, (b) Montana Pollution Discharge Elimination System permits, (c) Comprehensive Environmental Response Compensation Liability Act (Superfund), and (d) Comprehensive Environmental Cleanup and Responsibility Act (CECRA or state Superfund).

2. **Department of Natural Resources--Reclamation and Development Grant Program:** Provides grants for watershed improvements that directly and indirectly improve water quality.

3. **Department of Fish, Wildlife, and Parks:** Conducts aquatic life and fish surveys and improves water quality and riparian habitats through the Bull Trout Recovery Plan, West slope Cutthroat Recovery Plan, Future Fisheries Program, and other fisheries improvement programs.

4. **U.S. Natural Resource Conservation Service--Environmental Quality Incentive Program:** Provides grants for many different conservation programs ranging from noxious weed control to water quality improvement.

5. **U.S. Forest Service:** Conducts water quantity and quality monitoring and erosion control projects that improve water quality by improving timber and grazing practices, improving riparian habitat, stabilizing stream banks, and reducing erosion.

6. **U.S. Bureau of Land Management:** Conducts water quantity and quality monitoring and erosion control projects that improve water quality by improving timber and grazing practices, improving riparian habitat, stabilizing stream banks and reducing erosion.

7. **The U.S. Bureau of Reclamation, DNRC's Division of State Lands, Montana Department of Transportation** and the **U.S. Corp of Engineers** also conduct projects that improve water quality.

Potential Policy Issues:

- Are current funding sources, levels, and allocations appropriate to effectively achieve the mandates of HB 546? Should they be continued or modified? Does the information need to be expressed differently to adequately describe the TMDL-related funding scenario? The above information does not discuss expected funding beyond this biennium; would such information be helpful?

  DEQ Comment: During the 1997 Legislative Session the department proposed funding the TMDL program with general fund (40%) and federal 319 funds (60%). Prior to recommending the use of 319 funds, DEQ staff obtained verification from the EPA that nonpoint source TMDLs were an appropriate use of 319 funds. Although the department was flexible in regard to the funding sources for TMDLs, DEQ staff were adamant that if HB 546 were enacted, it must be funded. Ultimately, the Legislature, on its own initiative, decided to decrease the percentage of 319 funds to 40%.

  The department agrees that additional funds could be put to good use by the Conservation Districts and watershed advisory groups. In fact, they have no doubt that several 20 million more dollars could be put to good use. They note, however, that such funding levels are likely not reasonable. The department is cautiously following congressional action on the Clean Water Action Plan to determine whether it is a potential source of funds for conservation districts and watershed advisory groups. However, the department cautions that it is unrealistic to expect the TMDL program to proceed on schedule without adequate funding at both the local and state level.

- Is it appropriate to use funds for staffing that have traditionally been used for projects, rather than allocating general funds to support the FTEs authorized? A commentor noted that since the DEQ requires 319 applicants to obtain matching funds, a diversion of available grant funds results in the loss

of a far greater amount of total project dollars dedicated to on-the-ground improvements.

- DEQ Suggestion: The department would like to see consideration given over the longer term to establishing a broad-based watershed restoration funding source which combines small percentages of existing multi-agency funding sources and directs allocation of interest revenue towards water quality/watershed restoration activities which address multiple program objectives. An example might be a priority TMDL water body with impaired aquatic habitat that was also ranked high by DFWP as needing fisheries habitat improvements, was a critical bull trout recovery area and had aquatic life impacts associated with abandoned mines. By leveraging funds from a broad base and ensuring interagency coordination in watersheds of mutual concern, significant cost savings could be realized, duplication of efforts avoided, and scarce restoration resources maximized.

Subcommittee/Council Recommendations:

- The Subcommittee supports full funding of Montana's TMDL program. They also support the exploration of options to address concerns related to ensuring federal 319 funding allocations maximize nonpoint pollution control benefits on the ground.

- EQC staff should work with DEQ to document the progress, timing, and potential requirements of the federal Clean Water Action Plan, especially any relationship its requirements may have with the principles and procedures embodied in HB 546 and other statutory language. The Council could continue to track Montana's participation in this process. If inappropriate federal requirements were imposed, or if advocating additional flexibility to accommodate Montana's revised program were beneficial, Council members could coordinate to prepare appropriate correspondence (or propose a joint resolution) to support the State's position in the process. This may also be a topic for the Legislative Leadership Council on River Governance. The Council directed staff to draft a letter to the EPA on this issue as soon as possible. (The letter was sent in September 1998. A copy is available from the EQC office in Helena.)

Local Funding for HB 546 Implementation

Background: Funds are available from a variety of programs for watershed improvement projects, but there is often hesitancy to award such funds for administrative functions that will not show direct, on-the-ground results. During the 1997 Legislative Session, concern that local watershed groups were having trouble obtaining the funding necessary to carry out the organizational and administrative functions necessary to get organized on a watershed level led Conservation Districts to request an appropriation during the budgeting process. The suggestion was made to request that $100,000 ($50,000 per fiscal year) be appropriated to the DNRC for allocation on a request basis to local entities needing start-up funds.

Given DEQ's current reliance on existing groups to lead TMDL development, if new groups can't get started, they can't move forward on TMDLs. And, in addition to start-up funds for new groups, Conservation Districts wishing to move forward with TMDLs did not have spare funds to dedicate to the "getting started" component of TMDL development. The federal Clean Water Action Plan may have aspects that could assist in this regard. Montana's agencies are participating in the state response required to be eligible for funding associated with the Plan.

DNRC. The appropriation request described above was granted, and the money allocated to DNRC. The criteria for providing funds (maximum of $5,000 per requesting CD) are listed in the figure below.

DNRC Watershed Planning Assistance Grant Information, FY 1998

The Watershed Planning Assistance Grant Program was authorized by the 1997 Montana Legislature to assist Conservation Districts with expenses associated with watershed planning. Grant guidance is as follows:

- This grant program is available only for local watershed planning activities, meant to support existing watershed planning efforts and to help start up new ones.
- There is $50,000 available each year through this program. For Fiscal Year 1998, there will also be an additional $14,000 of Capacity Building funds available through MACD.
- Conservation Districts must be the project sponsors.
- This program is not an appropriate source of funding to do site-specific design and implementation. The program was created to support pre-project planning expenses.
- Examples of watershed planning activities that could be funded under this program might include, but are not limited to, such things as:
  - collection of baseline resource information to serve as a foundation for local watershed groups to make decisions, including purchase of field equipment;
  - facilitation of public meetings;
  - development of a watershed plan;
  - training to develop local watershed capacity;
  - planning and carrying out educational workshops or tours; and
  - incidental costs (supplies, postage, photocopies, meeting room, etc.).
- There will be a $5,000 limit per request. Additional funds may be requested if more than one conservation district is involved in the activity.
- This program is not intended to fund permanent staff. Grant monies, however, can be used for temporary staff or private consultant services provided there is a specific task or product that will result from the work.
- There are no match requirements, but identifying local contributions and other state/federal/private program involvement is important.
- Selection of projects will be based upon the importance of the activity in furthering an existing planning effort or in getting a new one started.

Source: DNRC, July, 1998.

The table on the next page describes how the FY 1998 grant funds were allocated. Although many of the funded activities relate to water quality improvement, two specifically refer to TMDL-related activities. Approximately $14,000 of "capacity building" funds from the Montana Association of Conservation Districts (MACD) was added to the total that could be distributed in FY 1998. According to DNRC staff, the funds were in high demand.

DNRC has requested increased funds for similar purposes in their FY 1999-2000 budget request, including an increase of $200,000 ($100,000 per year) for these "Watershed Planning Assistance Grants." If the increase were granted, then, the total Planning Assistance funding would be $300,000 for the biennium. DNRC staff have noted that if additional funding were appropriated for this program, the grant caps (now at $5,000/District) would likely double. EQC staff are aware of no other proposed changes in the grant issuance criteria. A commentor noted that much of the stimulus for the DNRC's request for additional grant funding grew out of needs identified by local entities during and after the 1997 Watershed Symposium held in Great Falls.

FY 1998 Watershed Planning Grant Award Recipients and Uses		
CD Recipient(s)	**Grant Amount**	**Proposed Use of Grant Funds**
Fergus	$4,000	Funds will be used for aerial assessment of 200 miles of Warm Springs Creek and upper Judith River watersheds, using a GPS unit that interfaces with GIS mapping and analysis.
Green Mountain	$5,000	Funds will be used to support a coordinator for Prospect Creek Watershed to help form a landowner watershed group, facilitate meetings, organize a watershed assessment, and hold a Know Your Watershed workshop.
Flathead, Lake, Lincoln	$15,000	Funds will be used to support expertise to oversee a regional watershed planning effort, a wetland mitigation project, a small acreage stewardship program, a carbon offset program, GIS database compilation, and other administrative activities.
Mineral	$2,500	Funds will be used to support a graduate student and watershed planner compiling resource information and developing a watershed plan and TMDL for Tamarack Creek.
Ruby Valley	$5,000	Funds will be used to support contract watershed planner assistance with researching resource information, coordinating among stakeholders, and developing a watershed TMDL plan for the Ruby River watershed.
Park	$5,000	Funds will be used to assist with efforts of the Upper Shields Watershed Association in setting up committees, identifying resource concerns, weed mapping, workshops, tours, and using current and past stream assessments to evaluate trends and help identify potential projects for a watershed plan.
Park	$2,100	Funds will be used to support efforts of the Yellowstone River Task Force to complete a physical features inventory, which will help them complete a comprehensive watershed plan for the Upper Yellowstone River.
Lincoln	$3,750	Funds will be used to use aerial photo information and stream surveys to identify areas on Grave Creek in need of restoration and to assess riparian recovery and natural channel design.
McCone, Roosevelt	$7,650	Funds will be used to support a temporary coordinator for the Lower Missouri Coordinated Resource Management (CRM) efforts on initial resource inventories and assessments (including water quality information) for a conservation plan.
Source: EQC; DNRC, July 21, 1998.		

In addition to the Planning Assistance grants, DNRC has requested $200,000 ($100,000 per fiscal year) in additional funds under their "223" grant program (named from the House Bill that authorized the program). These funds can be used for both projects and activities, which will contribute to the ability of Conservation Districts (and local groups, if they are sponsored by a CD) to fund the administrative costs associated with watershed planning and TMDL development.

MACD staff note CD concern that the monies allocated to DNRC for CD efforts not include mandates, but

allow the CDS to determine what they need, whether it's for TMDL-related efforts, or otherwise.

DEQ. In addition to the two DNRC requests for additional funding for administrative-related costs (totaling $400,000 or $200,000 per fiscal year), the DEQ issuance of 319 funds was conditioned (by the Legislature) to benefit "listed" waters. Many of these have an administrative component to them, which, although they are project-related, may involve a facilitator whose efforts would improve overall administration at the local level. It is not known whether future 319 funds will be conditioned for listed waters as they were by the 1997 Legislature.

The DEQ also applied to the EPA for funding to provide TMDL-related assistance, each with an administrative component. They were informed they would receive $80,000 of their request for 7 TMDL projects, each of which involve administrative components to them. (See preceding policy consideration for additional information on this funding.)

Potential Policy Issues:

- Are the current sources and proposals for administrative funds related to watershed planning and TMDL development sufficient to meet projected needs? Does the Subcommittee/Council wish to take a position on whether the budget request is a good idea? Is there sufficient coordination between DNRC and DEQ funding proposals and distribution mechanisms to create an efficient and understandable assistance mechanism to local groups? Is the CD role appropriately defined?

- There is interest on the part of Conservation Districts that agencies consult with district leadership to help coordinate priorities for funding made available to local efforts through grant programs. (DEQ Director Response (to original wording): The turn-around time on (the referenced) grant preproposal was less than a week from the time the appropriate DEQ staff received it. We did contact many of the Conservation Districts that we felt were in a position to accept these grants. There was insufficient time to contact all of the districts. Furthermore, this was a preproposal and the department had to gauge the amount of its effort against the chances for success. Given these sideboards, I believe we did an admirable job.)

Subcommittee/Council Recommendations:

- The Subcommittee supports DNRC's funding request for additional watershed assistance grant funding, as well as additional Conservation District administrative (i.e. 223) funds.

- The EQC should track the activities related to the federal Clean Water Action Plan, to determine if any interests they have in assisting with funding at the local level are appropriately addressed through that process. If they wish to influence the process they could provide comments to the Montana group, or consider proposing a Joint Resolution during the Session (if timing is appropriate). (See also recommendations in preceding section -- "Funding, its Use, and the Role of 319 Funds in Program Implementation".)

APPENDICES

APPENDIX A. SUMMARY OF EQC HB 546 IMPLEMENTATION OVERSIGHT FINDINGS AND RECOMMENDATIONS

The Environmental Quality Council's findings and recommendations from their oversight of HB 546 implementation are interspersed through Chapter 5 of this report and summarized below.

General Findings and Recommendations

1. During the 1997-98 Interim, the DEQ focussed on hiring the staff authorized for program expansion, developing preliminary guidance documents regarding the decisions they need to make regarding the 303(d) list, preparing the statutorily-required schedule for completion of TMDLs, and initiating outreach to Conservation Districts, local groups, and the public. The program is now fully staffed and getting up to speed. They have succeeded in converting some 319 and other projects into submittable TMDLs, and are working to convert more. Point-source TMDLs are continuing to be submitted to the EPA via the MPDES permitting process.

2. Montana is a landmark state in how they have decided to address, through state legislation, the federal Clean Water Act requirements to monitor and assess waters and develop TMDLs. Although other states have been less willing to move forward in TMDL development, Montana is trying to address the problem and ensure the state retains primacy over water programs.

3. There is concern regarding the need to fund the program, but what sources are appropriate to do so. Since the mandate is from the federal Clean Water Act, there is legislator interest in encouraging federal contributions to program implementation without disrupting traditional grant program uses of such funds.

4. The Subcommittee supports creative, voluntary solutions to water quality problems (e.g. the Deer Lodge land application of effluent to reduce nitrates in the Clark Fork River), and encourages the DEQ to consider and bring to the next EQC any policy proposals to increase incentives for such creative solutions.

5. In general, the recommendations in this report are in the vein of going slowly, not rushing to make changes to the new statutes, and allowing the program to continue to develop.

6. The next EQC should continue to provide legislative oversight of the DEQ's efforts to implement the provisions of HB 546. This effort should involve coordination and communication with the Statewide TMDL Advisory Group. Oversight should include discussions, where applicable, of state policy and other issues related to a successful TMDL program.

7. The Subcommittee recommends that the "primer" (the first four chapters of this legislative report, plus relevant appendices) be published as an independent guide. Prior to publishing it independently, however, it should be afforded broader review and subsequent refinement.

Topic-Specific Recommendations

Effluent Trading

- The effluent trading topic should be considered for inclusion in EQC HB 546 implementation oversight next Interim. Options for Council activities related to this topic include: an update on the EPA's finalization of their guidance for trading (due 12/99) and related demonstration projects, polling a few point source dischargers in Montana to determine their interest in trading, checking back on related activities on the Clark Fork, requesting the DEQ to notify the EQC if there is an interest in trading outside of TMDLs, and working with the DEQ to

evaluate whether or not policy issues need to be addressed.

Definition of Threatened

- The Subcommittee recommends that the definition of threatened also be a topic included in Council oversight of HB 546 implementation next Interim. The DEQ should provide an update to the next EQC on the effect the new definition is having on 303(d) list entries and on the ability to obtain funding for, and to address water quality issues on, those water bodies likely to be removed from the list due to the new definition. EQC staff should coordinate with DEQ and other states to assess the regional approach to this issue; if some conclusions result that are agreeable to Montana, suggestions could be made to the EPA for changes or refinements to their guidance to states on this subject.

- The Subcommittee discourages statutory changes this Session, but recommends the Statewide TMDL Advisory Group (STAG) and other interested parties begin discussions to determine if they feel the definition of threatened needs to be revised in statute. The STAG should report back to the Subcommittee or Council on the results of these consultations.

Use Support/Classification

- Similar to the preceding recommendation, the Subcommittee discourages related statutory changes this Session, but recommends that the Statewide TMDL Advisory Group (STAG) and other interested parties get together to determine if they feel there need to be statutory changes to address use support and classification issues. The STAG should report back to the Subcommittee or Council on the results of these consultations.

Sufficient Credible Data

- The Subcommittee acknowledges that voluntary monitoring, with proper training, can be a valuable component in water quality data gathering. They also acknowledge that the DEQ is in a time crunch to get a lot of work done in a short time. They commend the Montana Watercourse training efforts related to voluntary water quality monitoring and related coordination between the Volunteer Monitoring program and the DEQ, to enable mutual benefit. The next Council should include in its HB 546 implementation oversight a review of the role volunteer monitoring is playing in TMDL implementation in Montana.

Septic Issues Raised in the Clark Fork Voluntary Nutrient Reduction Program (Surface Water/Ground Water Interactions)

- The Subcommittee recommends the next EQC consider the entries in the Clark Fork Voluntary Nutrient Reduction Program (VNRP) as a valuable informational resource in any further consideration of septic issues in Montana. If the proposed State Water Plan chapter on Surface Water/Ground Water Interaction is likely to be initiated next Interim, the next EQC could recommend the issues presented here, and the strategies included in the VNRP, be revisited in that process.

- The Subcommittee supports DEQ's efforts to deal with the existing overlapping jurisdiction of subdivision review, which includes sewage system approval. They also support DEQ's plan to establish a technical review committee to evaluate current standards for site-specific waste water systems to make sure they are providing necessary protection of public health and the environment and to help identify new and/or more effective technology. Lastly, they support (and encourage the next EQC to track, if relevant) the efforts of DEQ's "cluster team" in developing means to promote clustering of residential units. The next EQC should request updates on these efforts where relevant.

Water Quantity Relationships

- The Subcommittee recommends exploration of potential cooperative opportunities to mesh efforts at solving streamflow-related water quality impairment problems with state drought planning efforts.

- The Subcommittee recommends continued Montana representation on the Legislative Leadership Council for River Governance. Montana's delegates to this Council should request further exploration of this issue and development of options for action, if appropriate.

Best Management Practices (BMPs)

- The Subcommittee recommends that appropriate entities work with the land user groups to enhance development of realistic and practical BMPs for voluntary application within their industry. BMP development/refinement should be followed up with an informational effort on: purpose, area applicability, and economic and environmental benefits.

- The Subcommittee recommends public agencies set an example for others by adopting BMPs for potential nonpoint source pollution generating facilities and activities.

- The DEQ's planned update and revision of their Nonpoint Source (NPS) Management Plan provides a unique opportunity to fulfill an EPA mandate (to update the Plan) and be creative in working with stakeholders to further research, develop, and describe voluntary BMPs for nonpoint source land uses. The department should check on whether such plans could take the format of individual "guides" for nonpoint source pollution generators. If so, the department should develop helpful technical and informational guidance materials to both fulfill the federal mandate, as well as fulfill the HB546 mandate to "develop and promote" a system of reasonable land, soil, and water conservation practices.

- The EQC should work with others to document what incentive programs exist in Montana and elsewhere for implementation of nonpoint source BMPs (beyond those incentives documented for the EQC BMP mini-seminar). There are a number of programs available in Montana where assistance is provided only if appropriate conservation practices are utilized. There are also innovations in other states; for example, Utah's Agricultural Resource Development Loan Program which offers low-interest loans for voluntary BMP implementation associated with agricultural lands. Any information generated on incentives could be incorporated into the BMP information documented for, and provided to, landowners as part of the NPS Plan update (see preceding recommendation).

Interagency Coordination

- Rather than taking a position on whether the Memorandum of Understanding (MOU) should be extended, the Subcommittee recommends the next Council participate as any other signatory to that MOU. This means others will determine whether or not it should expire. If it did expire, and the Montana Watershed Coordination Council (MWCC) still wished to report annually to a relevant entity, the next Council could provide such a forum. Given that the MWCC wishes to report its progress annually, one set of reporting could be done at the biennial Watershed Symposium (presuming these continue), and another to the EQC (resulting in biennial reporting to each).

- Where timely, the next EQC should request continued updates from agency staff on the progress being made on Montana's involvement in the federal Clean Water Action Plan, and what positive or negative effects it might have on interagency coordination in Montana. At the same time, they will request an update on any expected relationship (or "strings") the Plan process results might have on Montanan's ability to access 319,

Environmental Quality Incentives Program (EQIP), Conservation Reserve Program (CRP), or other funding programs, and when more might be known about this. The Council could discuss any appropriate action, based upon the information provided.

- The Subcommittee supports the efforts of the Montana Watershed Coordination Council, and encourages state agencies to dedicate the necessary staff and resources to accomplish Council goals and products. The Subcommittee encourages the completion of specific products and/or services important to Montana (e.g., a biennial watershed symposium, watershed group directory, watershed home page on the Internet, directory of funding sources, annual evaluation and reporting of their efforts, etc.).

- Further EQC oversight of the TMDL program (now and next Interim) should focus on seeing that the program is run efficiently and effectively. A positive first step in this type of oversight would be an examination of the myriad of duplicative efforts related to water quality and watershed projects.

Interaction with Tribes/Other States

- The Subcommittee supports enhanced coordination with tribes in Montana on a government-to-government basis. They encourage enhanced coordination without creating new governmental entities. The next EQC should direct its staff to further evaluate this topic, and potential enhanced or new state/tribal or state/state coordination mechanisms. This evaluation should include consultation with the National Conference on State Legislatures, the Legislative Council on River Governance, and the EPA's national tribal water quality advisory group, for ideas for enhanced coordination on TMDL development and water quality management in general.

Implications of the Lawsuit

- The Subcommittee suggests to the DEQ that they consider adding a column to the state's 303(d) list to display "Status of Water Quality Improvement Efforts" (or the like). Currently, state progress on TMDL development is only reflected in the 303(d) list when EPA TMDL approval allows that water (or an impaired parameter of it) be removed from the list; and the list is only published every two years (possibly less in the future). This misrepresents Montana's progress in developing TMDLs that are not yet approved. Since the list is now available on-line, such information would allow the list to be kept current and be more reflective of TMDL progress. Entries might be as simple as noting which stage the effort is in (e.g. "getting started," "assessment," "planning", or "TMDL for ___(name of water body)___ approved -- to be delisted in ___(date to be delisted)___"). If there were only a few major categories for entries, it should not raise too much concern about extra staff time required to enter the data. This might also serve to encourage others to get started on TMDL development, if they see others are progressing.

- The Subcommittee recommends that the next EQC consider continued updates on the status of the TMDL litigation in Montana, as well as other litigation regarding water quality.

Local Involvement vs. A Mandatory Timeframe

- The next EQC should evaluate progress in the fulfillment of the roles and responsibilities envisioned in HB546 (see Figure on pp. 103-104), and whether the relationship between the state and local Conservation Districts is effective and efficient.

- When EQC oversight of HB 546 implementation began, one suggestion DEQ staff made was that the EQC provide assistance in information and education. In this regard, EQC and DEQ staff have been coordinating since early 1998 on how the Subcommittee's *Oversight Report* could be crafted to both meet Subcommittee/Council goals, as well as provide an informational resource for future DEQ/EQC use. Presuming this continues to be the DEQ and EQC interest, the DEQ (and others) should provide further

suggestions on how this effort could assist their informational efforts and contribute to clarifying state/local roles. It appears from the recent grant funding response from the EPA that the EPA's focus was on development of specific TMDLs, not on funding statewide informational materials. (Note: DEQ staff already suggested that the EQC prepare a booklet on TMDL case studies -- this report includes 4 case studies, but more could be drafted over the 1999-2000 Interim given supporting resources, interest, and EQC/DEQ priorities.

Funding, Its Use, and the Role of 319 Funds in Program Implementation

- The Subcommittee supports full funding of Montana's TMDL program. They also support the exploration of options to address concerns related to ensuring federal 319 funding allocations maximize nonpoint pollution control benefits on the ground.

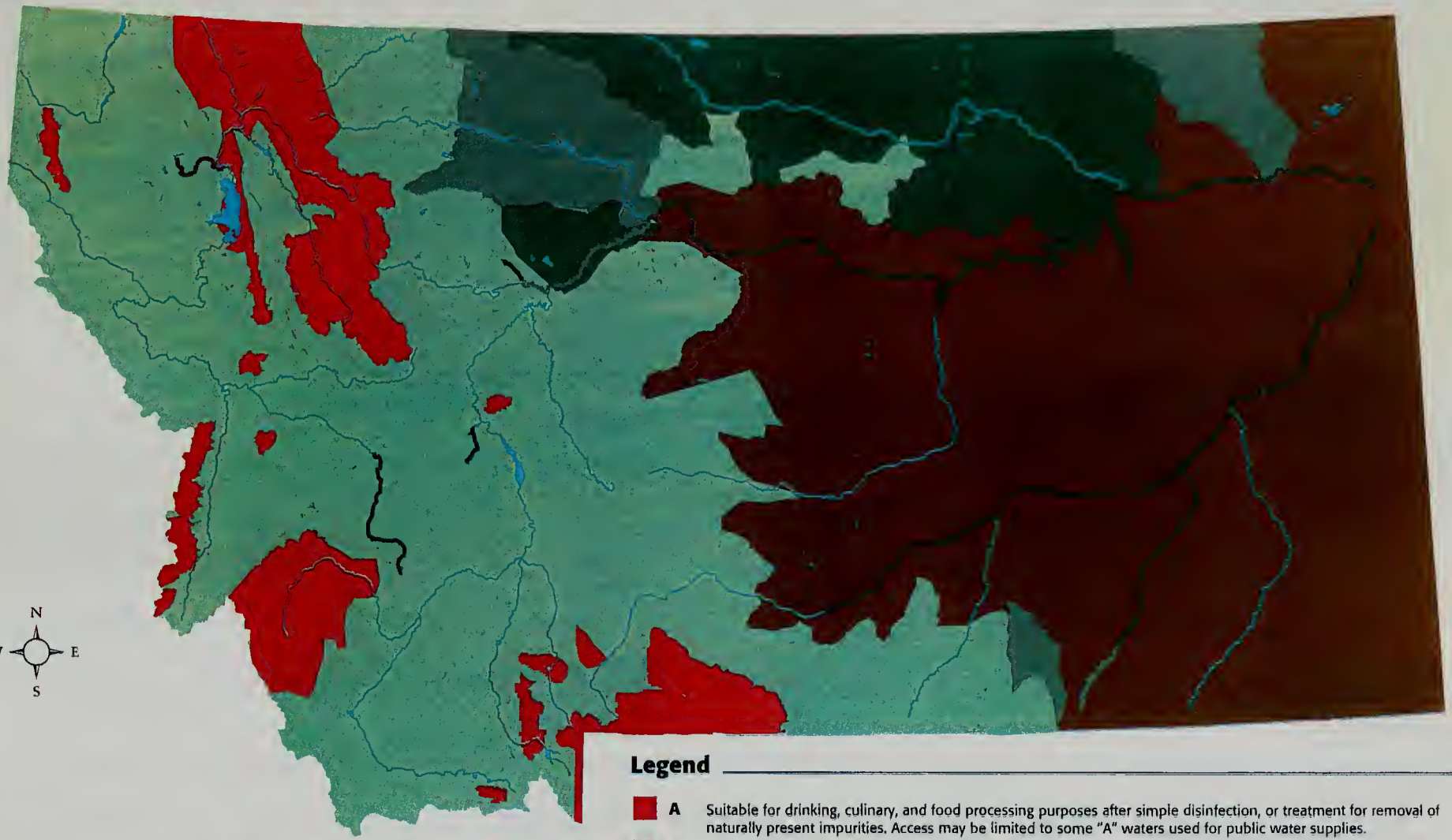
- EQC staff should work with the DEQ to document the progress, timing, and potential requirements of the federal Clean Water Action Plan, especially any relationship its requirements may have with the principles and procedures embodied in HB 546 and other statutory language. The Council could continue to track Montana's participation in this process. If inappropriate federal requirements were imposed, or if advocating additional flexibility to accommodate Montana's revised program were beneficial, Council members could coordinate to prepare appropriate correspondence (or propose a joint resolution) to support the state's position in the process. This may also be a topic for the Legislative Leadership Council on River Governance. The Council directed staff to draft a letter to EPA on this issue as soon as possible. (The letter was sent in September 1998. A copy is available from the EQC office in Helena.)

Local Funding for HB546 Implementation

- The Subcommittee supports DNRC's funding request for additional watershed assistance grant funding, as well as additional Conservation District administrative (i.e., 223) funds.

- The EQC should track the activities related to the federal Clean Water Action Plan to determine if any interests they have in assisting with funding at the local level are appropriately addressed through that process. If they wish to influence the process they could provide comments to the Montana group, or consider proposing a Joint Resolution during the Session (if timing is appropriate). (See also recommendations in preceding section -- "Funding, its Use, and the Role of 319 Funds in Program Implemenation".)

Montana Surface Water Quality Classifications*



Scale of Miles

0 20 40 60 80 100 120 140 160

Legend

- **A** Suitable for drinking, culinary, and food processing purposes after simple disinfection, or treatment for removal of naturally present impurities. Access may be limited to some "A" waters used for public water supplies.
- **B-1** Suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic wildlife, waterfowl, and furbearers; and agricultural and industrial water supply.
- **B-2** The same as B-1, but with **marginal** propagation of salmonid fishes.
- **B-3** The same as B-1, but with growth and propagation of **non**-salmonid fishes.
- **C** Suitable for bathing, swimming, and recreation; growth and propagation of salmonid or non-salmonid fishes and associated aquatic wildlife, waterfowl, and furbearers; and agricultural and industrial water supply.
- **I** Greatly impacted streams not currently supporting the uses listed above. They include reaches of Prickly Pear, Silver Bow, and Muddy Creeks.

**Exceptions to these use classifications exist. Complete identification of a waterbody's use classification can be found in Montana A.R.M. 16.20.604 through 16.20.612.*

Map composed by the Natural Resource Informations System, State Library, with data provided by the Montana Department of Environmental Quality.

Lower Yellowstone Watershed
USGS HUC 10100004

Map ID	Waterbody Number	Assessment Date (yr/mo)	Waterbody Name	Est. Lgth (miles)	TMDL Development Priority	Probable Impaired Uses	Probable Use Support (miles)			(Causes and sources of impairment are not linked)	
							Threatened	Partial Support	Non-Supporting	Probable Cause	Probable Source
1	MT42M10011	8910	Yellowstone R	138	LOW	Swimmable Drinking Water Supply Recreation Warm Water Fishery Aquatic Life Support		137.83 137.83 137.83 137.83 137.83		Metals Nutrients Other habitat alterations Pathogens Salinity/TDS/chlorides Suspended solids pH	AGRICULTURE Irrigated Crop Production MUNICIPAL POINT SOURCES NATURAL SOURCES Range Land Streambank Modification/Destabilization
2	MT42M00021	8911	Bennie Peer Cr	6	LOW	Aquatic Life Support Warm Water Fishery Drinking Water Supply Agriculture		5.63 5.63 5.63 5.63		Flow alteration Other habitat alterations Salinity/TDS/chlorides Suspended solids	AGRICULTURE Irrigated Crop Production Range Land Streambank Modification/Destabilization
3	MT42M00210	8911	Cottonwood Cr	11	LOW	Warm Water Fishery Drinking Water Supply Agriculture	10.7 10.7 10.7			Salinity/TDS/chlorides Suspended solids	AGRICULTURE NATURAL SOURCES Range Land
4	MT42M00211	8911	Burns Cr	33	LOW	Warm Water Fishery Agriculture Drinking Water Supply	33.4 33.4 33.4			Flow alteration Salinity/TDS/chlorides Suspended solids	AGRICULTURE Irrigated Crop Production Range Land
5	MT42M00212	8911	Morgan Cr	17	LOW	Warm Water Fishery	17.2			Suspended solids	AGRICULTURE Range Land
6	MT42M00213	8911	Glendive Cr	39	LOW	Aquatic Life Support Warm Water Fishery Drinking Water Supply Agriculture		38.5 38.5 38.5 38.5		Flow alteration Other inorganics Salinity/TDS/chlorides Suspended solids	AGRICULTURE Irrigated Crop Production NATURAL SOURCES
7	MT42M00214	8911	Cedar Cr	38	LOW	Aquatic Life Support Warm Water Fishery Agriculture Drinking Water Supply		38.1 38.1 38.1 38.1		Other inorganics Salinity/TDS/chlorides Suspended solids	AGRICULTURE NATURAL SOURCES Range Land
8	MT42M00215	8911	Cabin Cr	53	LOW	Aquatic Life Support Agriculture Warm Water Fishery Drinking Water Supply		53.4 53.4 53.4	53.4	Nutrients Other inorganics Salinity/TDS/chlorides Siltation	AGRICULTURE NATURAL SOURCES Petroleum Activities RESOURCE EXTRACTION Range Land
9	MT42M00216	8911	Bracken Cr	11	LOW	Warm Water Fishery Agriculture Drinking Water Supply	10.8 10.8 10.8			Flow alteration Salinity/TDS/chlorides	AGRICULTURE Irrigated Crop Production NATURAL SOURCES
10	MT42M00217	8911	Cherry Cr	41	LOW	Warm Water Fishery Agriculture Aquatic Life Support Drinking Water Supply Warm Water Fishery	41.4 41.4 41.4	41.1 41.4		Salinity/TDS/chlorides Suspended solids	AGRICULTURE NATURAL SOURCES Range Land
11	MT42M00218	9012	Sears Cr	12	LOW	Aquatic Life Support		12		Other habitat alterations	AGRICULTURE

Upper Clark Fork Watershed
USGS HUC 17010201

Map ID	Waterbody Number	Assessment Date (yr/mo)	Waterbody Name	Est. Lgth (miles)	TMDL Development Priority	Probable Impaired Uses	Probable Use Support (miles)			(Causes and sources of impairment are not linked)	
							Threatened	Partial Support	Non-Supporting	Probable Cause	Probable Source
1	MT76G0011	9002	Clark Fk R	17	HIGH	Cold Water Fishery - Trout	17.4			Metals Nutrients Other habitat alterations	AGRICULTURE Channelization Mill Tailings Mine Tailings RESOURCE EXTRACTION
2	MT76G0012	9002	Clark Fk R	59	HIGH	Recreation Cold Water Fishery - Trout Aquatic Life Support Swimmable		58.7 58.7 58.7 58.7		Flow alteration Metals Noxious aquatic plants Nutrients Organic enrichment/DO Other habitat alterations Siltation	AGRICULTURE Channelization Irrigated Crop Production MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings NATURAL SOURCES RESOURCE EXTRACTION
3	MT76G0013	9002	Clark Fk R	12	HIGH	Recreation Cold Water Fishery - Trout Aquatic Life Support Swimmable		11.8 11.8 11.8 11.8		Flow alteration Metals Noxious aquatic plants Nutrients Organic enrichment/DO Other habitat alterations Suspended solids	AGRICULTURE Channelization Irrigated Crop Production MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings Pasture Land RESOURCE EXTRACTION
4	MT76G0014	9002	Clark Fk R	17	HIGH	Recreation Cold Water Fishery - Trout Swimmable Aquatic Life Support		17.4 17.4 17.4 17.4		Flow alteration Metals Noxious aquatic plants Nutrients Organic enrichment/DO Other habitat alterations Suspended solids	AGRICULTURE INDUSTRIAL POINT SOURCES Irrigated Crop Production MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings Pasture Land RESOURCE EXTRACTION Streambank Modification/Destabilization
5	MT76G0031	9002	Silver Bow Cr	1	HIGH	Recreation Drinking Water Supply Cold Water Fishery - Trout Aquatic Life Support Swimmable		1 1 1 1 1		Flow alteration Metals Nutrients Other habitat alterations	INDUSTRIAL POINT SOURCES MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings RESOURCE EXTRACTION Upstream Impoundment
6	MT76G0032	9002	Silver Bow Cr	32	HIGH	Drinking Water Supply Aquatic Life Support Cold Water Fishery - Trout Recreation Agriculture Swimmable		31.9	31.9 31.9 31.9 31.9 31.9	Metals Nutrients Organic enrichment/DO Other habitat alterations Priority organics Siltation Unionized Ammonia	MUNICIPAL POINT SOURCES Mill Tailings Mine Tailings RESOURCE EXTRACTION Streambank Modification/Destabilization Subsurface Mining Surface Mining Wastewater
7	MT76G0041	9012	Brock Cr	12	LOW	Cold Water Fishery - Trout		11.5		Other habitat alterations	AGRICULTURE

Teton Watershed
USGS HUC 10030205

Map ID	Waterbody Number	Assessment Date (yr/mo)	Waterbody Name	Est. Lgth (miles)	TMDL Development Priority	Probable Impaired Uses	Probable Use Support (miles)			(Causes and sources of impairment are not linked)	
							Threatened	Partial Support	Non-Supporting	Probable Cause	Probable Source
1	MT41O0011	8912	Willow Cr	29	LOW	Aquatic Life Support Cold Water Fishery - Trout		28.9 28.9		Flow alteration Other habitat alterations Siltation	AGRICULTURE Irrigated Crop Production
2	MT41O00110	9009	Spring Cr	6	LOW	Aquatic Life Support Cold Water Fishery - Trout Swimmable Recreation		6.33 6.33 6.33 6.33		Flow alteration	AGRICULTURE Irrigated Crop Production
3	MT41O0012	8912	Deep Cr	7	LOW	Aquatic Life Support Cold Water Fishery - Trout		7.2 7.2		Flow alteration Other habitat alterations Siltation Suspended solids	AGRICULTURE Irrigated Crop Production NATURAL SOURCES Range Land
4	MT41O0013	8912	Mcdonald Cr	10	LOW	Cold Water Fishery - Trout	10.4			Flow alteration	AGRICULTURE Irrigated Crop Production
5	MT41O0014	8912	Blackleaf Cr	15	LOW	Cold Water Fishery - Trout Drinking Water Supply Aquatic Life Support		15.4 15.4 15.4		Salinity/TDS/chlorides Siltation	AGRICULTURE Petroleum Activities RESOURCE EXTRACTION
6	MT41O0015	8912	Teton R, N Fk	16		Aquatic Life Support Cold Water Fishery - Trout		16.1 16.1		Flow alteration Other habitat alterations	Highway/Road/Bridge Construction NATURAL SOURCES
7	MT41O0016	8912	Teton R	93	LOW	Drinking Water Supply Agriculture Aquatic Life Support Swimmable Warm Water Fishery Recreation		93 93 93 93 93 93		Flow alteration Other habitat alterations Other inorganics Salinity/TDS/chlorides Siltation Suspended solids Thermal modifications	AGRICULTURE Irrigated Crop Production NATURAL SOURCES Nonirrigated Crop Production Range Land Streambank Modification/Destabilization
8	MT41O0017	9001	Teton R	29	LOW	Agriculture Recreation Drinking Water Supply Cold Water Fishery - Trout Swimmable Aquatic Life Support	28.8 28.8	 28.8 28.8 28.8 28.8		Flow alteration Other habitat alterations Siltation Suspended solids	AGRICULTURE Irrigated Crop Production NATURAL SOURCES Nonirrigated Crop Production Range Land Streambank Modification/Destabilization
9	MT41O0018	9001	Teton R	28	LOW	Swimmable Cold Water Fishery - Trout Aquatic Life Support Recreation		28.2 28.2 28.2 28.2		Flow alteration Other habitat alterations	AGRICULTURE Irrigated Crop Production NATURAL SOURCES
10	MT41O0019	9009	Spring Cr	3	LOW	Aquatic Life Support Recreation Swimmable Cold Water Fishery - Trout		3 3 3 3		Flow alteration Other habitat alterations	AGRICULTURE Channelization Irrigated Crop Production LAND DISPOSAL Removal of Riparian Vegetation
	MT41O0021	9403	Freezeout Lake	3500 acres	LOW	Swimmable			3500	Metals	AGRICULTURE

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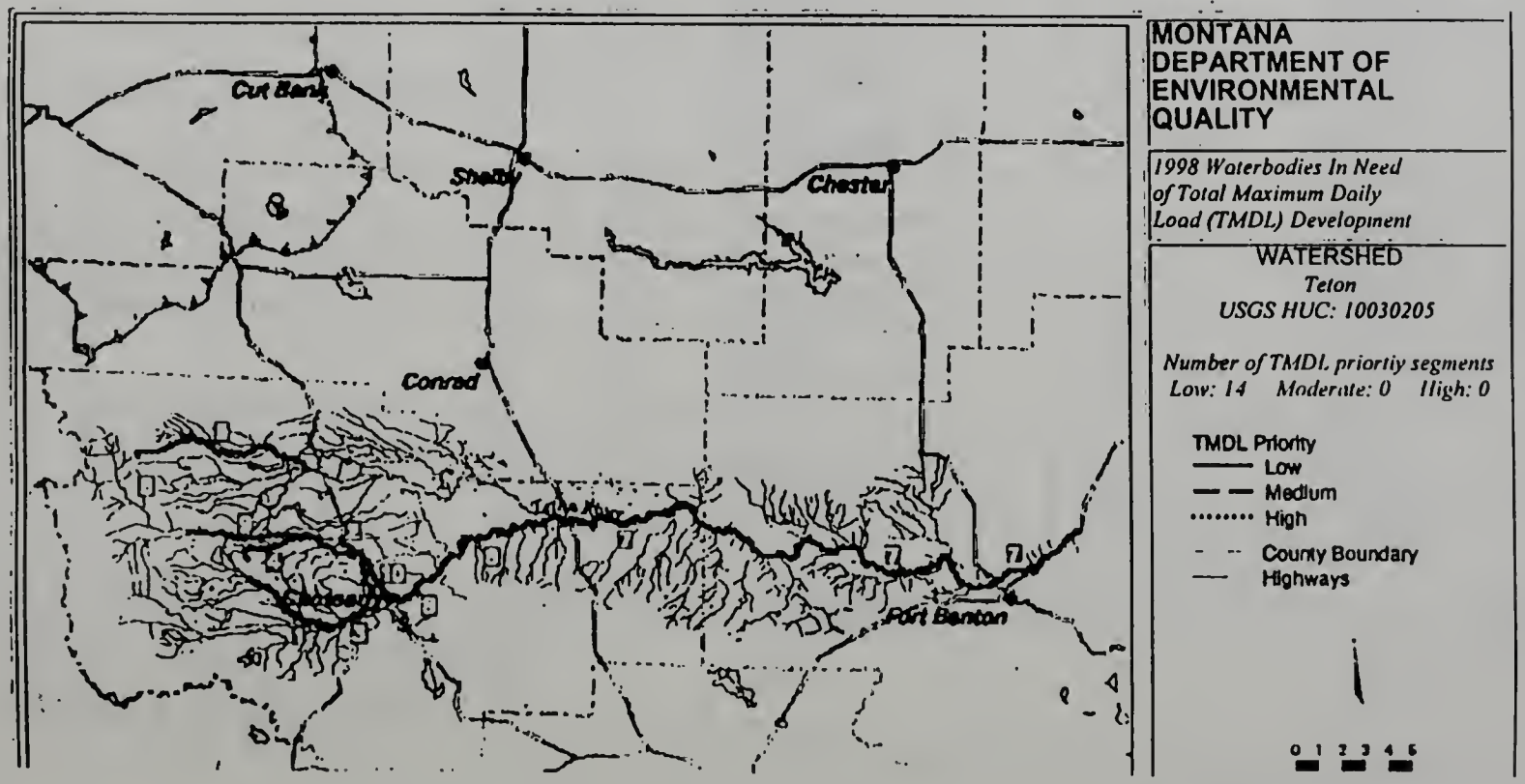
					Drinking Water Supply Cold Water Fishery - Trout Aquatic Life Support Agriculture		3500	3500 3500 3500	Salinity/TDS/chlorides	Irrigated Crop Production Nonirrigated Crop Production
	MT41O0022	9403	Priest Butte Lake	300 acres	LOW	Swimmable Cold Water Fishery - Trout			300 300	Metals Organic enrichment/DO Salinity/TDS/chlorides	AGRICULTURE Irrigated Crop Production Nonirrigated Crop production
	MT41O0031	9403	Bynum Reservoir	4120 acres	LOW	Aquatic Life Support Cold Water Fishery - Trout		4120 4120		Flow alteration siltation	AGRICULTURE Highway/Road/Bridge Construction Irrigated Crop Production
	MT41O0032	9403	Eureka Reservoir	400 acres	LOW	Aquatic Life Support		400		Flow alteration siltation	AGRICULTURE Highway/Road/Bridge Construction Irrigation
	MT41Q0031	9403	Benton Lake	5600 acres	LOW	Aquatic Life Support Warm Water Fishery Drinking Water Supply		5600 5600 5600		Nutrients selenium salinity	AGRICULTURE



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(2) This chapter does not abridge or alter rights of action or remedies in equity or under the common law or statutory law, criminal or civil, nor does this chapter or an act done under it estop the state or a municipality or person, as owner of water rights or otherwise, in the exercise of his rights in equity or under the common law or statutory law to suppress nuisances or to abate pollution.

History: En. Sec. 17, Ch. 21, L. 1971; amd. Sec. 6, Ch. 506, L. 1973; amd. Sec. 67, Ch. 349, L. 1974; amd. Sec. 11, Ch. 455, L. 1975; R.C.M. 1947, 69-4823(4).

Cross-References

Indemnification against loss to environment, Title 15, ch. 38.

75-5-103. Definitions. Unless the context requires otherwise, in this chapter, the following definitions apply:

(1) "Board" means the board of environmental review provided for in 2-15-3502.

(2) "Contamination" means impairment of the quality of state waters by sewage, industrial wastes, or other wastes, creating a hazard to human health.

(3) "Council" means the water pollution control advisory council provided for in 2-15-2107.

(4) (a) "Currently available data" means data that is readily available to the department at the time a decision is made, including information supporting its previous lists of water bodies that are threatened or impaired.

(b) The term does not mean new data to be obtained as a result of department efforts.

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(5) "Degradation" means a change in water quality that lowers the quality of high-quality waters for a parameter. The term does not include those changes in water quality determined to be nonsignificant pursuant to 75-5-301(5)(c).

(6) "Department" means the department of environmental quality provided for in 2-15-3501.

(7) "Disposal system" means a system for disposing of sewage, industrial, or other wastes and includes sewage systems and treatment works.

(8) "Effluent standard" means a restriction or prohibition on quantities, rates, and concentrations of chemical, physical, biological, and other constituents that are discharged into state waters.

(9) "Existing uses" means those uses actually attained in state waters on or after July 1, 1971, whether or not those uses are included in the water quality standards.

(10) "High-quality waters" means all state waters, except:

(a) ground water classified as of January 1, 1995, within the "III" or "IV" classifications established by the board's classification rules; and

(b) surface waters that:

(i) are not capable of supporting any one of the designated uses for their classification; or

(ii) have zero flow or surface expression for more than 270 days during most years.

(11) "Impaired water body" means a water body or stream segment for which sufficient credible data shows that the water body or stream segment is failing to achieve compliance with applicable water quality standards.

(12) "Industrial waste" means a waste substance from the process of business or industry or from the development of any natural resource, together with any sewage that may be present.

(13) "Interested person" means a person who has a real property interest, a water right, or an economic interest that is or may be directly and adversely affected by the department's preliminary decision regarding degradation of state waters, pursuant to 75-5-303. The term includes a person who has requested authorization to degrade high-quality waters.

(14) "Load allocation" means the portion of a receiving water's loading capacity that is allocated to one of its existing or future nonpoint sources or to natural background sources.

(15) "Loading capacity" means the mass of a pollutant that a water body can assimilate without a violation of water quality standards. For pollutants that cannot be measured in terms of mass, it means the maximum change that can occur from the best practicable condition in a surface water without causing a violation of the surface water quality standards.

(16) "Local department of health" means the staff, including health officers, employed by a county, city, city-county, or district board of health.

(17) "Metal parameters" includes but is not limited to aluminum, antimony, arsenic, beryllium, barium, cadmium, chromium, copper, fluoride, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc.

(18) "Mixing zone" means an area established in a permit or final decision on nondegradation issued by the department where water quality standards may be exceeded, subject to conditions that are imposed by the department and that are consistent with the rules adopted by the board.

(19) "Other wastes" means garbage, municipal refuse, decayed wood, sawdust, shavings, bark, lime, sand, ashes, offal, night soil, oil, grease, tar, heat, chemicals, dead animals, sediment, wrecked or discarded equipment, radioactive materials, solid waste, and all other substances that may pollute state waters.

(20) "Outstanding resource waters" means:

(a) state surface waters located wholly within the boundaries of areas designated as national parks or national wilderness areas as of October 1, 1995; or

(b) other surface waters or ground waters classified by the board under the provisions of 75-5-316 and approved by the legislature.

(21) "Owner or operator" means a person who owns, leases, operates, controls, or supervises a point source.

(22) "Parameter" means a physical, biological, or chemical property of state water when a value of that property affects the quality of the state water.

(23) "Person" means the state, a political subdivision of the state, institution, firm, corporation, partnership, individual, or other entity and includes persons resident in Canada.

(24) "Point source" means a discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or vessel or other floating craft, from which pollutants are or may be discharged.

(25) (a) "Pollution" means:

(i) contamination or other alteration of the physical, chemical, or biological properties of state waters that exceeds that permitted by Montana water quality standards, including but not limited to standards relating to change in temperature, taste, color, turbidity, or odor; or

(ii) the discharge, seepage, drainage, infiltration, or flow of liquid, gaseous, solid, radioactive, or other substance into state water that will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, or welfare, to livestock, or to wild animals, birds, fish, or other wildlife.

(b) A discharge, seepage, drainage, infiltration, or flow that is authorized under the pollution discharge permit rules of the board is not pollution under this chapter. Activities conducted under the conditions imposed by the department in short-term authorizations pursuant to 75-5-308 are not considered pollution under this chapter.

(26) "Sewage" means water-carried waste products from residences, public buildings, institutions, or other buildings, including discharge from human beings or animals, together with ground water infiltration and surface water present.

(27) "Sewage system" means a device for collecting or conducting sewage, industrial wastes, or other wastes to an ultimate disposal point.

(28) "Standard of performance" means a standard adopted by the board for the control of the discharge of pollutants that reflects the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, when practicable, a standard permitting no discharge of pollutants.

(29) (a) "State waters" means a body of water, irrigation system, or drainage system, either surface or underground.

(b) The term does not apply to:

(i) ponds or lagoons used solely for treating, transporting, or impounding pollutants; or

(ii) irrigation waters or land application disposal waters when the waters are used up within the irrigation or land application disposal system and the waters are not returned to state waters.

(30) "Sufficient credible data" means chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a water body is achieving compliance with applicable water quality standards.

(31) "Threatened water body" means a water body or stream segment for which sufficient credible data and calculated increases in loads show that the water body or stream segment is fully supporting its designated uses but threatened for a particular designated use because of:

(a) proposed sources that are not subject to pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices; or

(b) documented adverse pollution trends.

(32) "Total maximum daily load" or "TMDL" means the sum of the individual waste load allocations for point sources and load allocations for both nonpoint sources and natural background sources established at a level

necessary to achieve compliance with applicable surface water quality standards.

(33) "Treatment works" means works, including sewage lagoons, installed for treating or holding sewage, industrial wastes, or other wastes.

(34) "Waste load allocation" means the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources.

(35) "Water quality protection practices" means those activities, prohibitions, maintenance procedures, or other management practices applied to point and nonpoint sources designed to protect, maintain, and improve the quality of state waters. Water quality protection practices include but are not limited to treatment requirements, standards of performance, effluent standards, and operating procedures and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from material storage.

(36) "Water well" means an excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed and intended for the location, diversion, artificial recharge, or acquisition of ground water.

(37) "Watershed advisory group" means a group of individuals who wish to participate in an advisory capacity in revising and reprioritizing the list of water bodies developed under 75-5-702 and in the development of TMDLs under 75-5-703, including those groups or individuals requested by the department to participate in an advisory capacity as provided in 75-5-704.

History: En. Sec. 122, Ch. 197, L. 1967; amd. Sec. 2, Ch. 21, L. 1971; amd. Sec. 1, Ch. 506, L. 1973; amd. Sec. 59, Ch. 349, L. 1974; amd. Sec. 2, Ch. 455, L. 1975; amd. Sec. 3, Ch. 308, L. 1977; amd. Sec. 1, Ch. 444, L. 1977; R.C.M. 1947, 69-4802; amd. Sec. 1, Ch. 337, L. 1993; amd. Sec. 1, Ch. 340, L. 1993; amd. Sec. 1, Ch. 595, L. 1993; amd. Sec. 184, Ch. 418, L. 1995; amd. Sec. 1, Ch. 495, L. 1995; amd. Sec. 3, Ch. 497, L. 1995; amd. Sec. 1, Ch. 501, L. 1995; amd. Secs. 524, 568, Ch. 546, L. 1995; amd. Sec. 1, Ch. 541, L. 1997.

Compiler's Comments

1997 Amendment: Chapter 541 inserted definitions of currently available data, impaired water body, load allocation, loading capacity, sufficient credible data, threatened water body, total maximum daily load, waste load allocation, and watershed advisory group; and made minor changes in style. Amendment effective May 5, 1997.

75-5-104. Special applicability. This chapter applies to drainage or seepage from all sources, including that from artificial, privately owned ponds or lagoons, if such drainage or seepage may reach other state waters in a condition which may pollute the other state waters.

History: En. Sec. 124, Ch. 197, L. 1967; amd. Sec. 3, Ch. 21, L. 1971; R.C.M. 1947, 69-4804.

Cross-References

Waters property of state, Art. IX, sec. 3, Mont. Const.

75-5-105. Confidentiality of records. Except as provided in 80-15-108, any information concerning sources of pollution which is furnished to the board or department or which is obtained by either of them is a matter of public record and open to public use. However, any information unique to the owner or operator of a source of pollution which would, if disclosed, reveal methods or processes entitled to protection as trade secrets shall be maintained as confidential if so determined by a court of competent jurisdiction. The owner or operator shall file a declaratory judgment action to estsblish the existence of a trade secret if he wishes such information to enjoy confidential status. The

75-5-632. Criminal penalties. A person who willfully or negligently violates 75-5-605 or any pretreatment standard established pursuant to this chapter is guilty of an offense and, upon conviction, is subject to a fine not to exceed $25,000 per day of violation or imprisonment for not more than 1 year, or both. Following an initial conviction under this section, subsequent convictions subject a person to a fine of not more than $50,000 per day of violation or imprisonment for not more than 2 years, or both.

History: En. Sec. 17, Ch. 21, L. 1971; amd. Sec. 6, Ch. 506, L. 1973; amd. Sec. 67, Ch. 349, L. 1974; amd. Sec. 11, Ch. 455, L. 1975; R.C.M. 1947, 69-4823(2); amd. Sec. 9, Ch. 297, L. 1995.

Cross-References

Execution of criminal fine, 46-19-102.

75-5-633. Penalties for false statements and falsifying monitoring. Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this chapter or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this chapter shall upon conviction be punished by a fine of not more than $25,000 or by imprisonment for not more than 6 months, or both.

History: En. Sec. 17, Ch. 21, L. 1971; amd. Sec. 6, Ch. 506, L. 1973; amd. Sec. 67, Ch. 349, L. 1974; amd. Sec. 11, Ch. 455, L. 1975; R.C.M. 1947, 69-4823(6); amd. Sec. 2, Ch. 644, L. 1991.

75-5-634. Disposition of fines and civil penalties. Fines and civil penalties collected under this chapter, except those collected in a justice's court, must be deposited into the state general fund.

History: En. Sec. 17, Ch. 21, L. 1971; amd. Sec. 6, Ch. 506, L. 1973; amd. Sec. 67, Ch. 349, L. 1974; amd. Sec. 11, Ch. 455, L. 1975; R.C.M. 1947, 69-4823(5); amd. Sec. 43, Ch. 557, L. 1987; amd. Sec. 3, Ch. 600, L. 1991; amd. Sec. 62, Ch. 509, L. 1995.

Cross-References

Collection and disposition of fines, penalties, forfeitures, and fees, 3-10-601.

75-5-635. Costs and expenses — recovery by department. (1) In a civil action initiated by the department under this chapter, the department may ask for and the court is authorized to assess a violator for the cost of the investigation or monitoring survey that led to the establishment of the violation and any expense incurred by the state in removing, correcting, or terminating any of the adverse effects upon water quality resulting from the unauthorized discharge of pollutants.

(2) Any costs and expenses recovered by the department under the provisions of subsection (1) must be deposited in the state general fund.

History: En. Sec. 17, Ch. 21, L. 1971; amd. Sec. 6, Ch. 506, L. 1973; amd. Sec. 67, Ch. 349, L. 1974; amd. Sec. 11, Ch. 455, L. 1975; R.C.M. 1947, 69-4823(7); amd. Sec. 4, Ch. 600, L. 1991; amd. Sec. 63, Ch. 509, L. 1995.

75-5-636. Investigation of complaints by other parties. A person, association, corporation, or agency of the state or federal government may notify the department of an alleged violation of this chapter. Based upon information submitted by the person, association, corporation, or agency, the department shall conduct an investigation to determine the validity of the complaint. If a violation is established by the department's investigation, the department shall initiate an appropriate enforcement response as described in 75-5-617. If the investigation proves the protest to have been without reasonable cause, the department may seek recovery of investigative costs from the person who made the notification.

History: En. Sec. 20, Ch. 21, L. 1971; amd. Sec. 69, Ch. 349, L. 1974; amd. Sec. 13, Ch. 455, L. 1975; R.C.M. 1947, 69-4826; amd. Sec. 10, Ch. 297, L. 1995; amd. Sec. 14, Ch. 497, L. 1995.

Cross-References

Mandamus, Title 27, ch. 26.

75-5-637 through 75-5-640 reserved.

75-5-641. Appeals from board orders — review by district court. (1) An appeal of an order of the board shall be in the district court of the county in which the alleged source of pollution is located.

(2) A person interested in the order may intervene, in the manner provided by the rules of civil procedure, if he shows good cause. An intervenor is a party for the purposes of this chapter.

(3) The attorney general shall represent the board if requested, or the department may appoint special counsel for the proceedings, subject to the approval of the attorney general.

(4) The initiation of an action for review or the taking of an appeal does not stay the effectiveness of any order of the board unless the court finds that there is probable cause to believe:

(a) that refusal to grant a stay will cause serious harm to the affected party; and

(b) that any violation found by the board will not continue or, if it does continue, any harmful effects on state waters will be remedied immediately on the cessation of the violation.

(5) If a court does not stay the effectiveness of an order of the board, it may enforce compliance with that order by issuing a temporary restraining order or an injunction at the request of the board.

History: En. Sec. 15, Ch. 21, L. 1971; amd. Sec. 66, Ch. 349, L. 1974; R.C.M. 1947, 69-4821.

Cross-References

Montana Administrative Procedure Act — judicial review, Title 2, ch. 4, part 7.

Montana Rules of Civil Procedure — intervention, Rule 24, M.R.Civ.P. (see Title 25, ch. 20).

Injunctions, Title 27, ch. 19.

Part 7
Water Quality Assessment

TMDLs

75-5-701. Purpose. Consistent with the policy established in 75-5-101(2) to provide a comprehensive program for the prevention, abatement, and control of water pollution, the purpose of this part is to further direct the department to monitor state waters to accurately assess their quality and, when required, to develop total maximum daily loads for those water bodies identified as threatened or impaired.

History: En. Sec. 2, Ch. 541, L. 1997.

Compiler's Comments

Effective Date: Section 8, Ch. 541, L. 1997, provided: "[This act] is effective on passage and approval." Approved May 5, 1997.

75-5-702. Monitoring — water quality assessment listing. (1) The department shall monitor state waters to assess the quality of those waters and to identify surface water bodies or segments of surface water bodies that are threatened or impaired. The department shall use the monitoring results to revise the list of water bodies that are identified as threatened or impaired and to establish a priority ranking for TMDL development for those waters in accordance with subsections (4) and (7).

(2) In revising the list prepared pursuant to this section, the department shall use all currently available data, including information or data obtained from federal, state, and local agencies, private entities, or individuals with an interest in water quality protection. Except as provided in subsection (6), the department may modify the list only if there is sufficient credible data to support the modification. Prior to publishing a final list, the department shall provide public notice and allow 60 days for public comment on the draft list. The department shall make available for public review, upon request, documentation used in the determination to list or delist a particular water body, including, at a minimum, a description of the information, data, and methodology used. The department may charge a reasonable fee for the documentation, commensurate with the cost of providing the documentation to the requestor.

(3) A person may request that the department add or remove a water body or reprioritize a water body on a draft or published list by providing the data or information necessary to support the request. The department shall review the data within 60 days from its submittal. If the department determines that there is sufficient credible data to grant the request, the department shall provide public notice of its intended action and allow 60 days for public comment prior to taking action on the request. A person aggrieved by the department's decision to grant or deny the request may appeal the department's decision to the board.

(4) The department shall, in consultation with local conservation districts and watershed advisory groups pursuant to 75-5-704, review and revise the list and priority rankings of water bodies identified as threatened or impaired. The department shall review and revise the list at intervals not to exceed 5 years. The department shall make available for public review the data and information used in making any changes in its list of threatened or impaired water bodies that is developed and maintained pursuant to this section.

(5) By October 1, 1999, the department shall develop and maintain a data management system that can be used to assess the validity and reliability of the data used in the listing and priority ranking process. The department shall make available to the public, upon request, data from its data management system. The department may charge a reasonable fee for the data, commensurate with its cost of providing the data to the requestor.

(6) By October 1, 1999, the department shall use the data management system developed and maintained pursuant to subsection (5) to revise the list and to remove any water body that lacks sufficient credible data to support its

listing. If the department removes a water body because there is a lack of sufficient credible data to support its listing, the department shall monitor and assess that water body during the next field season or as soon as possible thereafter to determine whether it is a threatened water body or an impaired water body.

(7) In prioritizing water bodies for TMDL development, the department shall, in consultation with the statewide TMDL advisory group established pursuant to subsection (9), take into consideration the following:

(a) the beneficial uses established for a water body;

(b) the extent that natural factors over which humans have no control are contributing to any impairment;

(c) the impacts to human health and aquatic life;

(d) the degree of public interest and support;

(e) the character of the pollutant and the severity and magnitude of water quality standard noncompliance;

(f) whether the water body is an important high-quality resource in an early stage of degradation;

(g) the size of the water body not achieving standards;

(h) immediate programmatic needs such as waste load allocations for new permits or permit renewals and load allocations for new nonpoint sources;

(i) court orders and decisions relating to water quality;

(j) state policies and priorities, including the protection and restoration of native fish when appropriate;

(k) the availability of technology and resources to correct the problems;

(l) whether actions or voluntary programs that are likely to correct the impairment of a particular water body are currently in place; and

(m) the recreational, economic, and aesthetic importance of a particular water body.

(8) The department shall, in consultation with the statewide TMDL advisory group, develop a method of rating water bodies according to the criteria and considerations described in subsection (7) in order to rank the listed water bodies as high priority, moderate priority, or low priority for TMDL development. The department may not rank a water body as a high priority under this section without first validating the data necessary to support the ranking.

(9) (a) The department shall establish a statewide TMDL advisory group to serve in the consultation capacity set forth in 75-5-704(2)(a) and subsections (7) and (8) of this section. Fourteen members must be appointed by the director, based upon one nomination from each of the following interests:

(i) livestock-oriented agriculture;

(ii) farming-oriented agriculture;

(iii) conservation or environmental interests;

(iv) water-based recreationists;

(v) the forestry industry;

(vi) municipalities;

(vii) point source dischargers;

(viii) mining;

(ix) federal land management agencies;

(x) state trust land management agencies;

(xi) supervisors of soil and water conservation districts for counties east of the continental divide;

(xii) supervisors of soil and water conservation districts for counties west of the continental divide;

(xiii) the hydroelectric industry; and

(xiv) fishing-related businesses.

(b) If the director receives more than one nomination from a particular interest, the director shall notify the respective nominators and request that they agree on one nominee.

(10) The department shall provide public notice of meetings of the statewide TMDL advisory group and shall solicit, document, and consider public comments provided during the deliberations of the advisory group.

History: En. Sec. 3, Ch. 541, L. 1997.

Compiler's Comments

Effective Date: Section 8, Ch. 541, L. 1997, provided: "[This act] is effective on passage and approval." Approved May 5, 1997.

75-5-703. Development and implementation of total maximum daily loads. (1) The department shall, in consultation with local conservation districts and watershed advisory groups, develop total maximum daily loads or TMDLs for threatened or impaired water bodies or segments of water bodies in order of the priority ranking established by the department under 75-5-702. Each TMDL must be established at a level that will achieve compliance with applicable water quality standards and must include a reasonable margin of safety that takes into account any lack of knowledge concerning the relationship between the TMDL and water quality standards. The department shall consider applicable guidance from the federal environmental protection agency, as well as the environmental, economic, and social costs and benefits of developing and implementing a TMDL.

(2) In establishing TMDLs under subsection (1), the department may establish waste load allocations for point sources, and load allocations for nonpoint sources as set forth in subsection (8), and may allow for effluent trading. The department shall, in consultation with local conservation districts and watershed advisory groups, develop reasonable land, soil, and water conservation practices specifically recognizing established practices and programs for nonpoint sources.

(3) Within 10 years from May 5, 1997, the department shall develop TMDLs for all water bodies on the list of waters that are threatened or impaired, as that list reads on May 5, 1997. This provision does not apply to water bodies that are subsequently added or removed from the list according to the provisions of 75-5-702. Within 1 year from May 5, 1997, the department shall establish a schedule for completing the TMDLs within the 10-year period established by this subsection. The schedule must also provide a reasonable timeframe for TMDL development for impaired and threatened water bodies that are listed subsequent to May 5, 1997, and are prioritized as set forth in 75-5-702.

(4) The department shall provide guidance for TMDL development on any threatened or impaired water body, regardless of its priority ranking, if the necessary funding and resources from sources outside the department are

available to develop the TMDL and to monitor the effectiveness of implementation efforts. The department shall review the TMDL and either approve or disapprove the TMDL. If the TMDL is approved by the department, the department shall ensure implementation of the TMDL according to the provisions of subsections (6) through (8).

(5) For water bodies listed under 75-5-702, the department shall provide assistance and support to landowners, local conservation districts, and watershed advisory groups for interim measures that may restore water quality and remove the need to establish a TMDL, such as informational programs regarding control of nonpoint source pollution and voluntary measures designed to correct impairments. When a source implements voluntary measures to reduce pollutants prior to development of a TMDL, those measures, whether or not reflected in subsequently issued waste discharge permits, must be recognized in development of the TMDL in a way that gives credit for the pollution reduction efforts.

(6) After development of a TMDL and upon approval of the TMDL, the department shall:

(a) incorporate the TMDL into its current continuing planning process;

(b) incorporate the waste load allocation developed for point sources during the TMDL process into appropriate water discharge permits; and

(c) assist and inform landowners regarding the application of a voluntary program of reasonable land, soil, and water conservation practices developed pursuant to subsection (2).

(7) Once the control measures identified in subsection (6) have been implemented, the department shall develop a monitoring program to assess the waters that are subject to the TMDL to determine whether compliance with water quality standards has been attained for a particular water body or whether the water body is no longer threatened. The monitoring program must be designed based on the specific impairments or pollution sources. The department's monitoring program must include long-term monitoring efforts for the analysis of the effectiveness of the control measures developed.

(8) The department shall support a voluntary program of reasonable land, soil, and water conservation practices to achieve compliance with water quality standards for nonpoint source activities for water bodies that are subject to a TMDL developed and implemented pursuant to this section.

(9) If the monitoring program provided under subsection (7) demonstrates that the TMDL is not achieving compliance with applicable water quality standards within 5 years after approval of a TMDL, the department shall conduct a formal evaluation of progress in restoring water quality and the status of reasonable land, soil, and water conservation practice implementation to determine if:

(a) the implementation of a new or improved phase of voluntary reasonable land, soil, and water conservation practice is necessary;

(b) water quality is improving but a specified time is needed for compliance with water quality standards; or

(c) revisions to the TMDL are necessary to achieve applicable water quality standards.

(10) Pending completion of a TMDL on a water body listed pursuant to 75-5-702:

(a) point source discharges to a listed water body may commence or continue, provided that:

(i) the discharge is in conformance with a discharge permit that reflects, in the manner and to the extent applicable for the particular discharge, the provisions of 75-5-303;

(ii) the discharge will not cause a decline in water quality for parameters by which the water body is impaired; and

(iii) minimum treatment requirements adopted pursuant to 75-5-305 are met;

(b) the issuance of a discharge permit may not be precluded because a TMDL is pending;

(c) new or expanded nonpoint source activities affecting a listed water body may commence and continue their activities provided those activities are conducted in accordance with reasonable land, soil, and water conservation practices;

(d) for existing nonpoint source activities, the department shall continue to utilize educational nonpoint source control programs and voluntary measures as provided in subsections (5) and (6).

(11) This section may not be construed to prevent a person from filing an application or petition under 75-5-302, 75-5-310, or 75-5-312.

History: En. Sec. 4, Ch. 541, L. 1997.

Compiler's Comments

Effective Date: Section 8, Ch. 541, L. 1997, provided: "[This act] is effective on passage and approval." Approved May 5, 1997.

75-5-704. Watershed advisory groups. (1) In implementing the consultation requirements under 75-5-702(4) and 75-5-703(1) and (2), the department shall request the participation of representatives of the following interest groups to work in an advisory capacity with the local conservation districts and the department:

(a) livestock-oriented agriculture;
(b) farming-oriented agriculture;
(c) conservation or environmental interests;
(d) water-based recreationists;
(e) the forestry industry;
(f) municipalities;
(g) affected or potentially affected point source dischargers;
(h) mining;
(i) existing local watershed groups;
(j) federal land management agencies;
(k) state trust land management agencies;
(l) the tourism industry;
(m) the hydroelectric industry, if applicable; and
(n) fishing-related businesses.

(2) In implementing the consultation requirements of 75-5-702 and 75-5-703, the department shall:

(a) prior to consultation with the statewide TMDL advisory group pursuant to 75-5-702(7) and (8), schedule meetings with appropriate local conservation districts and the watershed advisory groups at a location within

their affected geographic area to review and revise the list of water bodies provided for in 75-5-702; and

(b) at a meeting held pursuant to subsection (2)(a), request whether there is new information that may affect the listing or priority ranking on water bodies within the affected area and solicit comments on revising the list.

(3) Based upon the information provided pursuant to subsection (2)(b), the department shall revise the list according to 75-5-702.

(4) Prior to and during the development of a TMDL within a particular watershed or basin, the department shall schedule a meeting or meetings with appropriate local conservation districts and watershed advisory groups at a location within the affected geographic area in order to solicit comments on developing the TMDL and information on sources that may be contributing to water quality impairment.

History: En. Sec. 5, Ch. 541, L. 1997.

Compiler's Comments

Effective Date: Section 8, Ch. 541, L. 1997, provided: "[This act] is effective on passage and approval." Approved May 5, 1997.

Code Commissioner Correction: Pursuant to the authority contained in sec. 314, Ch. 42, L. 1997, in (2)(a) the Code Commissioner substituted a reference to sec. 3(7) and (8) (75-5-702(7) and (8)) for reference to sec. 2(7) and (8).

75-5-705. Nonimpairment of water rights. Nothing in this part may be construed to divest, impair, or diminish any water right recognized pursuant to Title 85.

History: En. Sec. 6, Ch. 541, L. 1997.

Compiler's Comments

Effective Date: Section 8, Ch. 541, L. 1997, provided: "[This act] is effective on passage and approval." Approved May 5, 1997.

Parts 8 through 10 reserved

Part 11
Wastewater Treatment Revolving Fund

Part Cross-References

Water and Wastewater Operators' Advisory Council, 2-15-2105.

Metropolitan sanitary and/or storm sewer districts, Title 7, ch. 13, part 1.

County water and/or sewer districts, Title 7, ch. 13, part 22 and 23.

Consolidated local government waters supply and sewer districts, Title 7, ch. 13, part 30.

Municipal sewage and/or water systems, Title 7, ch. 13, part 43.

Water treatment plant operators, Title 37, ch. 42.

75-5-1101. Short title. This part may be cited as the "Water Pollution Control State Revolving Fund Act".

History: En. Sec. 1, Ch. 678, L. 1989; amd. Sec. 2, Ch. 538, L. 1997.

Compiler's Comments

1997 Amendment: Chapter 538 before "Revolving" substituted "Water Pollution Control State" for "Wastewater Treatment". Amendment effective May 5, 1997.

75-5-1102. Definitions. Unless the context requires otherwise, in this part the following definitions apply:

(1) "Administrative costs" means costs incurred by the department and the department of natural resources and conservation in the administration of the program, including but not limited to costs of servicing loans and issuing

APPENDIX E

(April 24, 1998; DRAFT)

SUFFICIENT CREDIBLE DATA FOR MAKING BENEFICIAL USE SUPPORT DETERMINATIONS

The Montana Department of Environmental Quality (DEQ) is proposing data quality objectives (DQOs) to insure that data are sufficient and credible and can be used to evaluate which waterbodies should be added to or removed from the 303(d) list. Sufficient credible data are necessary to make beneficial use support decisions. Any beneficial use support determinations that are made using data which were not collected by a DEQ sponsored entity that result in the listing or de-listing of a waterbody will be put on a priority list to be reassessed by DEQ.

EPA Guidelines

The attached tables were put together by the Intergovernmental Task Force on Monitoring Water Quality (ITFM) (1997 305(b) Report Guidelines; EPA-841-B-97-002A). The ITFM, currently in existence as the National Water Quality Monitoring Council, developed a model for stream monitoring for different types of designated uses based on the combination of biological, physical and chemical monitoring. The model defines the relationship between parameters that directly measure the condition of the biotic community. The EPA recommends that States incorporate ITFM's suite of parameters in their monitoring programs to evaluate attainment of beneficial uses. For example, ITFM recommends that the monitoring for aquatic life use support includes community level biological data, habitat, and physical/chemical field parameters in water and sediment.

Proposed Minimum Level of Information for Aquatic Life Use Support Determination

ITFM has put together tables 3-1 through 3-4 (attached) to evaluate the level of information (data quality objectives) necessary to determine if aquatic life is supported. The DEQ is proposing adoption of these tables (with modifications). The tables will be used by DEQ to establish the minimum level of information (score) required to make aquatic life use determinations for Montana waterbodies. The following scoring/evidence are considered sufficient credible data:

1) Under certain circumstances the use of only one data category (i.e., biology, habitat/physical or chemical) may be considered sufficient and credible regardless of the score. However, there must be overwhelming evidence (e.g., significant exceedences of numeric water quality standards over an extended period of time, obvious destruction of riparian habitat for the entire stream reach, etc.).

2) In most cases, for data to be considered sufficient and credible a minimum score of 6 is required for the evaluation of aquatic life use support. The score of 6 is cumulative and is the sum of the scores from the biology (table 3-1), habitat/physical (table 3-2) and chemistry (table 3-3 or 3-4) categories. The following describes the minimum score required for each category:

    A) If data are collected for all three categories the scores for each category shall be ≥ 2.

    B) If data are collected for only two of the three categories the scores for each of the categories evaluated shall be ≥ 3.

Proposed Minimum Level of Information for Other Beneficial Uses

Biological condition and physical habitat indicators will not be used to evaluate beneficial uses such as drinking water and contact recreation (e.g., swimming). One sample showing more than 125% of a human health standard will be sufficient to demonstrate impairment provided that the sample was collected using DEQ's Standard Operating Procedures (SOPs) and the analysis was performed by a laboratory using DEQ approved QA/QC protocols and analytical methods. A stream that is listed on the 303(d) list as impaired for drinking water uses will not be removed from the list unless or until there is at least quarterly sampling for three consecutive years with no more than one exceedence of human health water quality standards.

Rationale for modifications of Tables (draft)

1) **Table 3-1:** For a score of 3 "two assemblages preferred" was added to the technical component. Assemblages are defined as fish, macroinvertebrates or algae communities. **Rationale:** The DEQ intends to sample two assemblages to make a biological assessment; However, a single assemblage which includes high quality data would be accepted as a score three.

2) **Table 3-2:** For a score of 3 "Should be supplemented with photo points" was added to the technical component. **Rationale:** Habitat evaluations are often made using best professional judgement. Therefore, impairments, sampling site locations and stream reaches should be documented with photographs.

3) **Table 3-4:** For a score of 2 "< quarterly sampling of the water column and includes chemical analysis of sediment or a chlorophyll *a* analysis" was added to the column Spatial/Temporal Coverage. **Rationale:** In most cases, the water column of streams will not be sampled >quarterly for three years. However sediment chemistry (trace metals) can give additional information concerning impairment. Chlorophyll *a* is useful as an indicator of nutrients. Both sediment and chlorophyll *a* integrate impairment over an extended time period (30 days or more). Water column chemistry only indicates impairment for the period of time when the water column was sampled.

Table 3-1. Hierarchy of Bioassessment Approaches for Evaluation of Aquatic Life use Attainment Based on Resident Assemblages

Level of Info[a]	Technical Components	Spatial/ Temporal Coverage	Data Quality[b]	WBS Codes[c]
1	Visual observation of biota; reference conditions not used; simple documentation	Limited monitoring; extrapolations from other sites	Unknown or low precision and sensitivity; professional biologist not required	310, 320, 350, 322
2	One assemblage (usually invertebrates); reference conditions pre-established by professional biologist; biotic index or narrative evaluation of historical records	Limited to a single sampling; limited sampling for site-specific studies	Low to moderate precision and sensitivity; professional biologist may provide oversight	310, 320, 322, 350
3**	Single assemblage usually the norm; two assemblages preferred; reference condition may be site-specific, or composite of sites (e.g., regional); biotic index (interpretation may be supplemented by narrative evaluation of historical records	Monitoring of targeted sites during a single season; may be limited sampling for site-specific studies; may include limited spatial coverage for watershed-level assessments	Moderate precision and sensitivity; professional biologist performs survey or provides training for sampling; professional biologist performs assessment.	310, 315, 320, 321, 330, 331, 350
4	Generally two assemblages, but may be one if high data quality; regional (usually based on sites) reference conditions used; biotic index (single dimension or multimetric index)	Monitoring during 1-2 sampling seasons; broad coverage of sites for either site-specific or watershed assessments; conducive to regional assessments using targeted or probabilistic design	High precision and sensitivity; professional biologist performs survey and assessment	310, 315, 320, 321, 330, 331, 340, 350

NOTE: Table is based on use in lotic systems. With some modification, these approaches would apply to other waterbody types.

[a] Level of information refers to rigor of bioassessment, where 1 = lowest and 4 = highest.

[b] Refers to ability of the ecological endpoints to detect impairment or to differentiate along a gradient of environmental conditions.

[c] WBS Assessment Type Codes from Table 1-1.

** Minimum approach proposed to be used by DEQ

Table 3-2. Hierarchy of Habitat Assessment Approaches for Evaluation of Aquatic Life Use Attainment

Level of Info[a]	Technical Components	Spatial/ Temporal Coverage	Data Quality[b]	WBS Codes[c]
1	Visual observation of habitat characteristics; no true assessment; documentation of readily discernable land use characteristics that might alter habitat quality; no reference conditions	Sporadic visit; sites are mostly from road crossings or other easy access	Unknown or low precision and sensitivity; professional scientist (biologist, hydrologist) not required	365
2	Visual observation of habitat characteristics and simple assessment; use of land use maps for characterizing watershed condition; reference condition pre-established by professional scientist	Limited to annual visit and non-specific to season; generally easy access; limited spatial coverage and/or site-specific studies	Low precision and sensitivity; professional biologist or hydrologist not involved or only correspondence	370
3**	Visual-based habitat assessment using standard operating procedures (SOPs) Should be supplimented with photo points; may be supplemented with quantitative measurements of selected parameters; conducted with bioassessment; data on land use compiled and used to supplement assessment; reference condition used as a basis for assessment	Assessment during a single season usually the norm; spatial coverage may be limited or broad and commensurate with biological sampling; assessment may be regional or site specific	Moderate precision and sensitivity; professional biologist performs survey or provides training for sampling; professional biologist performs assessment.	375
4	Assessment of habitat based on quantitative measurements of instream parameters, channel morphology , and floodplain characteristics; conducted with bioassessment; data on land use compiled and used to supplement assessment; reference condition used as a basis for assessment	Assessment during 1-2 seasons; spatial coverage usually broad and commensurate with biological sampling; assessment may be regional or site-specific	High precision and sensitivity; professional biologist or hydrologist performs survey and assessment	380

NOTE: Table is based on use in lotic systems. With some modification, these approaches would apply to other waterbody types.

[a] Level of information refers to rigor of assessment, where 1 = lowest and 4 = highest.

[b] Refers to ability of the habitat endpoints to detect impairment or to differentiate along a gradient of environmental conditions.

[c] WBS Assessment Type Codes from Table 1-1.

** Minimum approach proposed to be used by DEQ

E-4

Table 3-3. Hierarchy of Toxicological Approaches and Levels for Evaluation of Aquatic Life Use Attainment

Level of Info[a]	Technical Components	Spatial/ Temporal Coverage	Data Quality[b]	WBS Codes[c]
1	Any one of the following: • Acute or chronic WET • Acute ambient • Acute sediment	1-2 WET test/yr ir 1 ambient or sediment sample tested in a segment or site	Unknown/low; minimal replication used; laboratory quality or expertise unknown	510, 520, 530, 550
2	Any of the following: • Acute or chronic ambient • Acute sediment • Acute and chronic WET for effluent-dominated system	3-4 WET test/yr or 2 ambient or sediment samples tested in segment or site at different times	Low/moderate- little replication used within a site; laboratory quality or expertise unknown or low	510, 520, 530, 540, 550
3	Any of the following: • Acute and chronic WET for effluent-dominated system • Chronic ambient or acute or chronic sediment	Monthly WET tests or total of 3 tests based on samples collected in a segment at 3 different times	Moderate/high - replication used; trained personnel and good laboratory quality	510, 520, 540, 550
4	Both of the following: • Acute and chronic ambient and • Acute or chronic sediment	≥ 4 test in total based on samples collected in a segment at 4 different times including low flow conditions	High - replication used; trained personnel and good laboratory quality	530, 540, 550

[a] Level of information refers to rigor of toxicity, where 1 = lowest and 4 = highest.

[b] Refers to ability of the toxicity testing endpoints to detect impairment or to differentiate along a gradient of environmental conditions.

[c] WBS Assessment Type Codes from Table 1-1.

**Minimum approach proposed to be used by DEQ

Table 3-4. Hierarchy of Physical/chemical Data Levels for Evaluation of Aquatic Life Use Attainment

Level of Information[a]	Technical Components	Spatial/ Temporal Coverage	Data Quality[b]	WBS Codes[d]
1	Any one of the following: • Water quality monitoring using grab water sampling • Water data extrapolated from an upstream or downstream station where homogeneous conditions are expected • Monitoring data >5 years old without further validation • Best professional judgement based on land use data, source locations	Low spatial and temporal coverage: • Quarterly or less frequent sampling with limited period of record (e.g., 1 day) • Limited data during key periods or at high or low flows (critical hydrological regimes)	Unknown/ Low	210, 220, 230, 240, 850, 150, 130
2**	Any one of the following: • Water quality monitoring using grab water sampling • Rotating basin surveys involving multiple visits or automatic sampling • Synthesis of existing or historical information on fish contamination levels • Screening models based on loadings data (not calibrated or verified	Moderate spatial and temporal coverage: • Bimonthly or quarterly sampling during key periods (e.g., spring/summer months) • Fish spawning seasons, including limited water quality data at high and low flows • Short period of record over a period of days or multiple visits during a year or season • < Quarterly sampling of water column, however also includes Chemical analysis of sediment or a chlorophyll analysis	Low/ Moderate	210,220, 222, 230, 240, 242, 260, 810,
3	Any one of the following: • Composite or a series of grab water sampling used (diurnal coverage as appropriate) • Calibrated models (calibration data <5 years old)	Broad spatial and temporal (long-term, e.g., >3 years) coverage of site with sufficient frequency and coverage to capture acute events: • Typically, monthly sampling during key periods (e.g., spring/summer months, fish spawning seasons), multiple samples at high and low flows • Lengthy period of record (sampling over a period of months)	Moderate/ High	211, 222, 242, 250, 610
4	Any of the following: • Water quality monitoring using composite or series or grab samples (diurnal coverage as appropriate) • Limited sediment quality sampling and fish tissue analyses at sites with high probability of contamination	Broad spatial (several sites) and temporal (long-term, e.g.,>3 years) coverage of site with sufficient frequency and parametric coverage to capture acute events, chronic conditions, and all other potential P/C impacts: • Monthly sampling during key periods (e.g., spring/summer months) • Fish spawning seasons, including multiple samples at high and low flows • Continuous monitoring	High	231, 242, 250

NOTE: Physical refers to physical water parameters (e.g., temperature, pH, dissolved oxygen, turbidity, color, conductivity)

[a] Level of information refers to rigor of physical/chemical sampling and analysis, where 1 = lowest and 4 = highest.

[b] Even a short period of record can indicate a high confidence of *impairment* based on P/C data; 3 years of data are not required to demonstrate impairment. For example, a single visit to a stream with severe acid mine drainage impacts (high metals, low pH) can result in high confidence of nonsupport. However, long-term monitoring may be needed to establish full support.

[c] Refers to ability of the physical/chemical endpoints to detect impairment or to differentiate along a gradient of environmental conditions.

[d] WBS Assessment Type Codes from Table 1-1.

** Minimum approach proposed to be used by DEQ

E-6

APPENDIX F

(April 27, 1998; DRAFT)

Department of Environmental Quality
Monitoring and Data Management Bureau - Water Quality Section

Proposed Beneficial Use Support Decision Guidelines

Proposed beneficial use support decision guidelines are being developed by the Montana Department of Environmental Quality (DEQ) following EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports, 3-10 - 3-27). The beneficial use support decision guidelines are used after the data are determined to be sufficient and credible following proposed guidelines being developed by the (DEQ). Beneficial use support determinations are made for aquatic life use, fisheries, contact recreation and drinking water because they have the highest water quality requirements. Therefore, when these beneficial uses are determined to be fully supported all other uses (e.g., agricultural and industrial) are, by definition, fully supported as well.

Independent Application Test

Drinking water, contact recreation and fish consumption beneficial use support decisions are made using independent application. Aquatic life use support decisions are also made using independent application if only one or two data categories are used (i.e., chemical or toxicity, biological or habitat/physical). If any data category indicates impairment, using independent application, the waterbody is not fully supporting it's beneficial uses.

Aquatic Life and Fishery Beneficial Use Support

Aquatic life use support is a broad descriptor intended to protect aquatic plant and animal communities (e.g., game and non-game fish and other aquatic animals and plants) normally associated with a high quality ecosystem. To make a beneficial use support determination for aquatic life usually requires the evaluation of at least two of the following data types: 1) biology, 2) habitat/physical, or 3) chemistry or toxicity (bioassay).

Beneficial use support determinations are often made by comparing the condition of a stream to the expected reference condition. Reference condition may be determined using 1) a least-impaired stream within the same region having similar geology, hydrology and morphology; 2) historical data; 3) an upstream control or paired watershed approach; and 4) a review of existing literature.

Beneficial use determinations for aquatic life are first made using bioassay (toxicity), chemistry, biological and habitat/physical data independent of one another. If there is only sufficient credible data for one or two of the three data types (i.e., chemistry and bioassay, habitat/physical or biology) independent application is used to make beneficial use support decisions. If there is

1

sufficient credible data for all three of the categories, beneficial use decisions are combined using a weight of evidence analysis to produce the final determination employing the following guidelines:

Weight of Evidence Test

A) **Fully supporting**: requires no more than one (1) partially supporting use determination for chemical or bioassay (toxicity), biological or habitat/physical evaluations.

B) **Partially supporting**: requires a minimum of two (2) partially supporting aquatic life use determinations or one (1) not supporting aquatic life use determination for chemical or bioassay (toxicity), biological or habitat/physical evaluations with the remaining fully supported.

C) **Not supporting**: requires a minimum of one (1) partially supporting aquatic life use determination and one (1) not supporting aquatic life use determination for chemical or bioassay (toxicity), biological or habitat/physical evaluations.

Independent beneficial use support decisions are combined using the above weight of evidence guidelines. The weight of evidence test requires a high level of information that includes chemical, biological and habitat/physical data. At least two of the three categories (chemical or bioassay, biological and habitat) are required to indicate impairment in order to make a determination that the water body is not fully supporting aquatic life use.

Independent Application Decision Guidelines

The following provides independent application guidelines for making aquatic life, drinking water, contact recreation, and fish consumption beneficial use decisions:

I. **Aquatic Life Use Support Decision Guidelines** (Following EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports, 3-10 - 3-27). EPA guidelines were modified for Montana. Modifications are in *italics.*

1. *Bioassay* (Toxicity)

Fully supporting: Toxicity was not detected in either the acute or chronic tests *(bioassay).*

Partially Supporting: *Bioassay test indicates chronic toxicity.*

Not supporting: *Bioassay test indicates acute toxicity.*

2. **Chemistry/Physical** (Physical defined as temperature, suspended sediment, turbidity, etc.)

A) **Priority pollutants (metals, chlorine, and ammonia)**

Fully Supporting: *For a small data set no exceedence > 125% of acute or chronic standards for any pollutant.* If there is a large data set (minimum of quarterly sampling for 3 years): No more than 1 exceedence of acute or chronic guidelines within a 3 year period. *All sediment trace metal levels < 200% of reference.*

Partially supporting: *A beneficial use support decision cannot be partially supporting for these parameters using a small water column chemistry data set.* If there is a large data set (minimum of quarterly sampling for 3 years) for any pollutant, acute or chronic standards are exceeded more than once within a 3-year period, but in ≤ 10 percent of the samples. *Sediment trace metal levels ≥200% but ≤ 400% of reference.*

Not supporting: *Using a small data set there is an accedence > 125% of an acute or chronic standard.* If there is a large data set (minimum of quarterly sampling for 3 years) for any pollutant, an acute or chronic standard is exceeded in ≥10 percent of the samples within a 3-year period. *Sediment trace metal level > 400% of reference.*

B) *Nutrients,* **Dissolved Oxygen, pH, T.S., Turbidity and Temperature**

Fully supporting: *Numeric or narrative guidelines (water quality standards) are not exceeded for any pollutant or measurements are similar to reference condition.* If there is a large data set (minimum of 30 measurements with at least 3 years of sampling during critical periods, e.g., late summer) and the guidelines are exceeded in less than 10% of measurements then the waterbody is fully supporting aquatic life. Dissolved oxygen requires consideration of diurnal changes and the time of the year *(e.g., presence or absence of critical life stages).*

Partially supporting: *A partially supporting beneficial use support decision cannot be made for most of these parameters using a small data set. However, nutrient concentrations can and will be compared to reference condition (e.g., >200% and <400%; must be >5X the detection limit).* If there is a large data set (minimum of 10 measurements/year with

at least 3 years of sampling during critical periods, e.g., late summer) and the guidelines (water quality standards) are exceeded 11 - 25% of measurements then the waterbody is partially supporting aquatic life. Dissolved oxygen requires consideration of diurnal changes and the time of the year *(e.g., presence or absence of critical life stages).*

Not Supporting: *Numeric or narrative guidelines (water quality standards) are exceeded for any pollutant. Nutrients will be compared to reference condition (≥ 400%; must be > 5X the detection limit).* If there is a large data set (minimum of 10 measurements/yr with at least 3 years of sampling during critical periods, e.g., late summer) and the guidelines are exceeded in greater than 25% of measurements, the waterbody is not supporting aquatic life. Dissolved oxygen requires consideration of diurnal changes and the time of the year *(e.g., presence or absence of critical life stages).*

3. Habitat Assessment

Fully supporting: Data indicate that the habitat is similar to reference conditions: channel morphology; substrate composition; bank/riparian structure; and flow regime of the region. The stream has riparian vegetation of natural types. The stream has minimal short term impacts to the riparian vegetation. *DEQ Stream Reach Survey score is ≥75% of reference.*

Partially supporting: Modification of habitat slight to moderate, limited riparian zones because of encroaching land use patterns, and some evidence of watershed erosion caused by land use activities. Channel modification slight to moderate. *Flow alterations have impact on aquatic life. However, the stream can recover flow within the same season. DEQ Stream Reach Survey score is 25-75% of reference.*

Not supporting: Severe habitat alteration by channelization and dredging activities, removal of riparian vegetation, bank failure, heavy watershed erosion or alteration of the flow regime. *Flow alterations cause the stream to go dry. The stream cannot recover flow within the same season. The DEQ Stream Reach Survey score is < 25% of reference.*

4. Biological Assessment

Fully supporting: Data indicate functioning, sustainable biological assemblages (assemblages include fish, macroinvertebrates and algae) none of which have been modified significantly beyond the natural range of the reference condition *(>75% of reference condition). Wild fishery population is >75% of reference condition*

(Note: DEQ will work with MDFWPs to further develop fishery guidelines). The Chlorophyll a (mg/m^2) is ≤ 150% of reference condition.

Partially supporting: At least one biological assemblage (assemblages include fish, macroinvertebrates and algae) indicates moderate modification of the biological community metrics compared to reference *(25-75% of reference condition). Wild fishery population is 25-75% of reference condition (Note: DEQ will work with MDFWPs to further develop fishery guidelines. The Chlorophyll a (mg/m^2) is > 150% and ≤ 300% of reference condition.*

Not supporting: At least one assemblage indicates nonsupport (assemblages include fish, macroinvertebrates and algae). Data clearly indicate severe modification of the biological community metrics compared to reference condition *(<25% of reference condition). The stream does not support a sustainable fishery (Note: DEQ will work with MDFWPs to further develop fishery guidelines). The Chlorophyll a (mg/m^2) is > 300% of reference condition.*

II. Drinking Water Beneficial uses (After Treatment)

Fully supporting: No human health standard exceedences.

Not supporting: Exceedence of human health standards ≥ once in the past three (3) years.

III. Contact Recreation (e.g., Swimming)

Fully supporting: There are no excessive alga blooms *(blue-green algae occurring during mid/late summer that discourages swimming)*, no bathing area closures, or < 200 colonies per 100 ml fecal coliform for 90% of the samples collected in a 30-day period.

Partially supporting: Excessive alga blooms *(blue-green algae blooms occurring during mid/late summer that discourages swimming)*, turbidity, odor, etc. that restrict swimming. Beach closures. Not more than 10% of samples exceed 400 colonies per 100 ml fecal coliform during any 30-day period.

Not supporting: Lakewide bathing closures. Swimming inhibited by excessive alga blooms *(blue-green algae blooms occurring during mid/late summer that discourages swimming)* pathogens, turbidity, odor, etc.. More than 10% of samples exceed 400 colonies per 100 ml fecal coliform in a 30 day period.

IV. Fish consumption:

Fully Supporting: no restrictions or advisories in effect.

Partially Supporting: Restricted consumption advised.

Not supporting: Fish consumption is not recommended.

Note: Designated use classifications or water quality standards may need to be updated in order to make appropriate beneficial use determinations. Data collected for making water body assessments will also assist in developing updated designated use classifications or water quality standards.

TMDL Check List - Department of Environmental Quality - 12/2/97

Contact: Stuart Lehman at Montana DEQ, if you would like more information (406) 444-5319 / stlehman@mt.gov

Basic Components for Approval	Comments
1. *Plan is developed to meet State Water Quality Standards.*	For each TMDL, a description of the applicable standards for the waterbody of concern should be provided. There should be reasonable assurance that these standards will be attained as a result of implementing the TMDL. If uncertainty exists, a "phased" TMDL approach may be used, relying on post-implementation monitoring to determine the success of meeting water quality goals. Water quality standards may include numeric, narrative, use classification, and antidegradation components.
2. *Plan has quantified goals, targets or endpoints.*	Although a numeric water quality standard often serves as the target (e.g. 5mg/L dissolved oxygen, 200 #/100 ml fecal coliform), seldom do state water quality standards have numeric nutrient and sediment standards that are useable for nonpoint source issues. Instead, an endpoint or endpoints have to be established that address the site-specific nature of the problem. These endpoints are established as a means to judge success of the control measures in restoring water uses. There are a number of different endpoints the Region have approved as part of the TMDL review process. DEQ can provide more information on of different types of targets/endpoints that have been used as part of TMDLs in the region.
3. *Plan has quantified pollutant reduction targets.*	TMDLs need not be expressed in pounds per day or concentration when alternative means of expression are better suited to the waterbody problem. Based on EPA's TMDL regulation, TMDLs can be expressed as mass per unit of time, toxicity, or other appropriate measure. "Other appropriate measure" could include an estimate of % reduction in sediment or nutrients needed to achieve water quality standards. In developing a TMDL, it is most helpful to first visualize the solutions that will be used to address the water quality problem, and then adapt the TMDL to fit the solutions. For example, if the water quality issue is excessive sedimentation from upland conditions, then the TMDL should relate to the decrease in amount of erosion from uplands. If the issue is sedimentation related to channel conditions, then the TMDL should somehow relate to the decrease in the amount of bank erosion or perhaps the increase in stream stability. DEQ can provide examples of different types of TMDLs that have been used in the region .
4. *All significant sources of a pollutant are considered.*	The term "pollutant" is used broadly to include traditional pollutants such as metals, nutrients, BOD, and fecal coliform, but such things as sedimentation, elevated stream temperature due to poor riparian conditions, and poor flow regimes are also included. All sources or causes of the stressor must be identified or accounted for in some manner. This accounting can lump several sources of unknown origin together. The TMDL need only address the control of a subset of these sources as long as the water quality standards are expected to be met as a result of controlling those sources. For nonpoint source TMDLs, this often means that priority areas in the watershed can be identified and targeted for controls.

5. *Plan uses an appropriate level of technical analysis.*	The level of complexity of nonpoint source TMDLs can vary from site-to-site. The ultimate goal of the Clean Water Act is improvement and protection of water quality. The "correct" level of analysis is that level that will result in meeting this goal. We feel it is also important to tailor the level of analysis such that the stakeholders proceed with implementation of BMPs, resulting in attainment of water quality goals. DEQ and EPA will approve a range of approaches for TMDL development, some relying on best professional judgment and yet others relying on more sophisticated modeling.
6. *Plan considers seasonality and incorporates a margin of safety.*	The Clean Water Act requires each TMDL to be established with a margin of safety. A margin of safety can be either explicit or implicit in the analysis or assessment. For nonpoint sources, there is often high variability in the data as well as uncertainty in BMP effectiveness. Applying an explicit margin of safety (for example - some specific number of BMPs that will assure water quality standards are met) may be difficult under these circumstances. Because of the possible uncertainty involved in nonpoint source TMDLs, the margin of safety is addressed by requiring post-implementation monitoring to assure the control practices are working and the water quality endpoints are being met.
7. *Responsibilities for implementation are assigned.*	In a geographic sense, TMDLs may be allocated by individual discharger, by tributary watershed, by source, or land use category, by land parcel, or other appropriate scale or partitioning method. Allocations for nonpoint sources are often best professional estimates whereas waste load allocations for point sources are often based on a more detailed analysis. Further, the allocation of nonpoint source TMDLs can be an allocation of actual loads or it may be an allocation of responsibilities. Allocation of responsibilities can take the form of identifying what BMPs will be applied and where they will be applied in the watershed for the purpose of meeting water quality goals. It should also be noted that approvals of nonpoint source TMDLs by DEQ and EPA have acknowledged the reliance on voluntary control programs.
8. *Appropriate level of public involvement.*	States usually meet this requirement by publishing a public notice of the TMDL, asking for comments. In the case of many nonpoint source projects, there is involvement from a range of stakeholders from the beginning through the end of the project, so a public notice may contribute little to informing stakeholders and explaining what will be done. The fundamental requirement for public participation is that all stakeholders have an opportunity to be part of the process.

APPENDIX H

(April 8, 1998; DRAFT)

Department of Environmental Quality
Monitoring and Data Management Bureau - Water Quality Section

Proposed Stream Assessment Protocols for the Montana Department of Environmental Quality (DEQ)

I. Goals

1. To collect enough information about a water body to meet the definition of sufficient and credible data. Due to limited resources, the Department is proposing to assess a stream via conducting one field visit. Therefore, a considerable amount of effort will be made during the field visit to coordinate with the Conservation Districts, land owners, etc. and to collect data that reflects water quality over time. For example, macroinvertebrate and algae community structure, habitat evaluations, sediment chemistry, and chlorophyll *a*, all may reflect both the conditions of a stream at the time of sampling and also provide a historical perspective (e.g., Macroinvertebrates can reflect water quality for up to one year prior to sampling). In addition, an attempt will be made to collect historical data (e.g., fishery data from Montana Department of Fish Wildlife & Parks (MDFWPs).

2. To make beneficial use support determinations with confidence. Data will be collected to evaluate biology (fish, macroinvertebrates or algae), chemistry (water column and sediment) and habitat characteristics (aquatic and riparian). In most cases, at least two of the three categories (biology, chemistry or habitat) will be required to show impairment in order for a water body to be considered not fully supporting beneficial uses.

II. Methods

1. Location

All sampling locations will be documented using GPS, legal description, site description and dated still photography. Each stream will be sampled near the mouth and near the headwaters. Streams will be sampled at least once every 20 miles (or at stream reach transitions locations; e.g., changes across ecoregions or land use activities). A DEQ Stream Reach Assessment Form will be filled out for each stream reach.

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2. Chemistry

A) **Water column grab sample:** Analyze for pH, conductivity, dissolved oxygen, temperature, common ions, nutrients and trace metals. **Rationale:** Need water column chemistry to detect impairment (e.g., exceeds water quality standards or reference condition), and to characterize the stream (chemistry reflects hydrogeomorphology, geology, etc). Data will also be useful for stream classification purposes.

B) **Sediment composite grab samples:** Sample deposition areas (e.g., surface sediments from pools; 0-2 cm). Sieve the sediment to a uniform particle size and determine organic matter content. Analyze sample for total recoverable trace metals (nitric acid digestion) using an ICP scan (use an atomic absorption furnace for low level analysis of Se, As, and Hg). Compare results to reference condition. **Rationale:** Metals may enter the water column only when high water occurs. Metals that enter the water column from runoff will often precipitate under aerobic conditions or with a change in pH. Therefore, sediment may reflect metal availability to aquatic life over a longer time frame than does a grab sample from the water column.

3. **Physical/habitat**

A) **Conduct a stream reach survey:** Conduct stream survey using a DEQ Stream Reach Survey Form (DEQ SOP Manual). The form provides a scoring system. Compare the score to reference condition. Document physical impact using dated still photography. Document location of impact using GPS, legal description and site description. **Rationale:** Method documents impact to the riparian habitat, stream channel, spawning gravels, etc. and provides a numeric score that can be compared to reference condition. DEQ will also estimate discharge and document Rosgen stream class, stream order, elevation, gradient, aspect, basin area, upstream length, drainage density and primary source of water (e.g., spring) for classification purposes and developing reference condition for future reference (use maps where appropriate). **Note:** Average riffle width and depth, and percent canopy should be recorded for the site where biological samples are collected.

B) **Optional Physical/habitat Data Collection:** Conduct a pebble count, measure channel cross section, bank full discharge and discharge. Determine percent land use in the watershed via maps, aerial photographs,

etc. (e.g., percent dryland agriculture, irrigation, road density, urban, etc.). Generate a GIS map with land use coverages.

4. **Biological**

A) **Algae and Macroinvertebrates:** Collect algae and macroinvertebrate following Montana DEQ sampling methods (1995 SOP Manual). Calculate index (e.g., for calculating a macroinvertebrates index the method will include cumulative scores of metrics that will include: taxa richness, percent dominance, percent mayflies, etc.). The index will be compared to reference condition. **Rationale:** Invertebrates and algae integrate impacts to water quality over time (e.g., toxins, sediment, nutrients, habitat, etc.).

B) **Chlorophyll *a*:** Collect chlorophyll *a* samples and calculate chlorophyll *a* /square meter. Compare to reference. **Rationale:** Excessive chlorophyll *a* indicates that algae is abundant (productivity; biomass). Algae are often more abundant in water bodies that have increased nutrient loading.

C) **Fisheries:** Gather fishery information from MDFWPs reports. **Rationale:** MDFWPs fishery reports provide information concerning impacts to fishery populations and habitat.

MONTANA CONSERVATION DISTRICTS

SCHEDULE FOR MONTHLY CONSERVATION DISTRICT MEETINGS

1st SUNDAY	1st MONDAY	1st TUESDAY	1st WEDNESDAY	1st THURSDAY	1st FRIDAY	1st SATURDAY
	Meagher County North Powell	Carter County Chouteau County Custer County Judith Basin Park Powder River Roosevelt County Wibaux Yellowstone	Eastern Sanders County Little Beaver McCone Ruby Valley	Big Horn Lake County Phillips		
2nd SUNDAY	**2nd MONDAY**	**2nd TUESDAY**	**2nd WEDNESDAY**	**2nd THURSDAY**	**2nd FRIDAY**	**2nd SATURDAY**
	Cascade County Dawson County Flathead Granite Missoula County Pondera County Sweet Grass County	Bitterroot Deer Lodge Valley Glacier County Hill County Lewis and Clark County Sheridan County Toole County Treasure County Valley County	Daniels County Fergus County Garfield County Stillwater Upper Musselshell	Broadwater Carbon Liberty County Richland County		
3rd SUNDAY	**3rd MONDAY**	**3rd TUESDAY**	**3rd WEDNESDAY**	**3rd THURSDAY**	**3rd FRIDAY**	**3rd SATURDAY**
	Madison	Blaine County Jefferson Valley Mineral County Teton County	Green Mountain Lincoln Prairie County	Beaverhead Gallatin County Lower Musselshell		
4th SUNDAY	**4th MONDAY**	**4th TUESDAY**	**4th WEDNESDAY**	**4th THURSDAY**	**4th FRIDAY**	**4th SATURDAY**
	Mile High		Big Sandy Rosebud			
Last SUNDAY	**Last MONDAY**	**Last TUESDAY**	**Last WEDNESDAY**	**Last THURSDAY**	**Last FRIDAY**	**Last SATURDAY**
	Petroleum County	Bitterroot				

APPENDIX J

ENVIRONMENTAL QUALITY COUNCIL

STATE CAPITOL
PO BOX 201704
HELENA, MONTANA 59620-1704
(406) 444-3742

GOVERNOR MARC RACICOT
DESIGNATED REPRESENTATIVE
Julie Lapeyre

HOUSE MEMBERS
Vicki Cocchiarella
Co-Chairman
Haley Beaudry
Kim Gillan
George Heavy Runner
Karl Ohs
Bill Tash

SENATE MEMBERS
Ken Mesaros
Co-Chairman
Vivian M. Brooke
William S. Crismore
Lorents Grosfield
Bea McCarthy
Bill Wilson

PUBLIC MEMBERS
Bill Snoddy
Jerry Sorensen
Jeanne-Marie Souvigney
Greg Tollefson

LEGISLATIVE ENVIRONMENTAL ANALYST
Todd Everts

Memo To: Sen. Mesaros
Rep. Cocchiarella
Rep. Tash
Gary Ingman, DEQ

From: Kathleen Williams, EQC Staff

Date: August 20, 1997

Subject: Summary of August 7th Meeting

Listed below are the ideas I caught in my notes regarding EQC's potential role in the implementation of HB546. Instead of a full summary of the meeting, this list has been created, and Gary Ingman's outline in response to EQC questions is attached. The combination of this list and his outline succinctly communicate the critical components of the meeting.

- Assist with education; including that for state-wide advisory group members. Help DEQ reduce the jargon used in conjunction with program implementation.

- EQC members could participate in Statewide Advisory Committee meetings, which hopefully will be held in varied locations across the state.

- Conduct an EQC training session on TMDLs, so EQC members can effectively participate in the process locally. (Rep. Cocchiarella prefers an active, rather than a passive, legislator role in program implementation. Rep. Tash would like to continue to assist by being an informed spokesman for the program. Sen. Mesaros commented that government should go to the communities, rather than the other way around.)

- DEQ does not want to conduct numerous reporting updates to the EQC; everyone's time could probably be used better in other ways.

- Legislators want to be notified when TMDL meetings/activities are being conducted in their area.

- EQC members encouraged the use of existing available resources and programs to build upon for program implementation (e.g. Future Fisheries projects, Conservation Districts, etc.).

- Vicki suggested a watershed involvement competition as an incentive program for locals to get involved in watershed-related activities and thereby enhance ownership in the activities affecting their area. The DEQ and EQC could develop the criteria for the award. DEQ could provide assistance; the locals would steer it.

- Rep. Tash mentioned the success of the landscape video, sponsored in part by Rocky Mountain Elk Foundation. It stresses compatibilities, rather than differences, in various land management activities.

- Rep. Cocchiarella questioned how kids, say, in the 6th thru 8th grades, could be brought into the dialogue. Maybe through the development of a video and accompanying booklet.

- Van Jamison noted that DEQ planned to develop a short-term outreach plan with a long-term vision. Gary wants to target landowners, highlighting success stories with them. He feels there needs to be a systematic means of applying solutions.

- EQC is a neutral party that could produce some of these informational materials. Van suggested that other entities may wish to contribute to reduce costs.

- Rep. Cocchiarella requested that, though EQC has an oversight role, she would like communication to be two-way; she wants feedback from DEQ on how the EQC can better help with program implementation.

- Gary suggested that the cumulative TMDL program effectiveness could be evaluated and incorporated into another EQC environmental trends document.

- DEQ would like to work as partners with EQC in program implementation.

- EQC could play a role in addressing potential legislative changes necessary to fully implement TMDLs in Montana. Some varied interpretations of the linkage between the Water Quality Act and subdivision law have already been raised.

- There are some technical policy issues that could also be investigated, including the improvement of BMPs (already on the EQC's plate), non-point source pollution control (voluntary vs. mandatory), and consistency and appropriateness of the application of water quality standards.

- DEQ has not yet made the decision as to whether they are going to be generally proactive in program implementation, or more passive. The proactive role would involve the development and implementation of a strategic approach to finishing TMDLs in a systematic manner, taking the 10-year timeframe very seriously. The more passive approach would involve notifying local groups of the assistance that is

available from the DEQ to develop TMDLs and base the scope of the agencies efforts on level of interest from local groups. The EQC could advise DEQ on which approach should be emphasized.

- Gary summed up his ideas for EQC involvement: (1) facilitate policy review and development; (2) assist with public information by facilitating public involvement and serving as a liaison with local governments (especially concerning cross-jurisdictional issues); (3) track progress of DEQ's implementation of HB546; (4) recommendations for funding and program modifications; (5) evaluate the progress in an upcoming indicators document; (6) provide a forum to raise and address overarching and emerging issues.

- There was discussion regarding a potential joint meeting/training session of the Statewide Advisory Group and the EQC. The November EQC meeting could be rescheduled to accommodate something like this. EQC staff will contact DEQ to determine progress in time to reschedule if necessary.

- Others that didn't get into my notes?

Please let me know by August 29th if there were any ideas I missed, or whether anything has been misconstrued. Thank you in advance. And thanks to DEQ (Mark Simonich, Van Jamison, and Gary Ingman) for their thoughtful preparation for this meeting.

EQC TMDL COORDINATION MEETING
Room 104 Capitol Building - 8/7/97

I. Introductions, Background, Objectives

Monitoring and Data Management Bureau role in TMDLs:

- monitoring water bodies for standards attainment
- identifying threatened and impaired waters
- inventorying pollution sources
- providing technical support for TMDL development
- evaluating TMDL effectiveness and WQS attainment

TMDL Definition and Background on Issues:

- technology-based vs. water quality-based
- TMDL is based on relationship between pollution sources and instream WQ conditions
- TMDL is a mechanism for integrating management of NPS and PS
- TMDL is a means of allocating pollution control responsibilities among sources in a watershed
- CWA requires states to monitor and assess WBs, identify WQLS, prioritize, develop TMDLs
- MT has 900 WQLS and has completed 129 PS and 3 NPS TMDLs
- MT has not assessed all water bodies for standards attainment
- conservation groups are suing states for poor progress in implementing CWA; regulated community is concerned about implications of "listing"

Provisions contained in H.B. 546:

- legal authority
- public participation
- the "list"
- setting priorities
- schedule
- interim protection
- voluntary approaches
- monitoring
- water rights

II. DEQ Update on TMDL Implementation - Status and Expectations

Status since bill signing in May - Four major areas of work:

Planning:

- held a number of DEQ meetings to formulate plans, discuss policy
- developed preliminary work plan
- developed division financial plans and TMDL budget

Public Information:

- Initiated public information campaign (speaking to groups, developing web site info, etc.)
- hosted informational/information gathering workshop and began dialogue with stakeholder and various interest groups (proceedings)

TMDL staffing:

- Initiated recruitment process for nine new TMDL positions (three completed)
- worked with NRCS to develop and recruit for new IPA TMDL position

TMDL advisory council:

- began process of establishing statewide TMDL advisory group (letter)

Expectations:

- new positions described, classified and advertised by September
- statewide TMDL advisory group established by September
- involve new staff in reviewing 1996 impaired water list (good training)
- involve advisory group in production of 1998 draft list and prioritization process
- involve advisory group in TMDL policy and work plan development?
- put outreach positions to work immediately networking with existing watershed groups, MWCC, water quality protection districts, etc.
- place emphasis on completing TMDLs under development now (Clark Fork, Flathead, Swan Lake, Tenmile, etc.)
- emphasize public information in all phases and develop and utilize a public information plan
- field work to reassess WQLS, support TMDL development will begin in earnest next summer
- explore ways to apply a watershed approach to facilitate development of multiple TMDLs

Work Plan:

- milestones shown in handout

III. DEQ Perspective on Greatest Challenges in Implementing H.B. 546

Challenges:

- dealing with petitions for listing and de-listing waters (requires lots of resources)
- pursuing a locally-driven, voluntary approach and getting the job done in ten years
- clearly defining roles of statewide advisory group and keeping the process moving ahead
- providing continuity and oversight to increasing numbers of TMDLs
- providing monitoring support to increasing numbers of TMDLs

- finding efficient approaches to TMDL development that gets the job done water quality-wise, achieves high level of local buy-in, is politically correct, cost effective, and minimally burdensome on landowners (financially, culturally, etc.)
- achieving consensus/comfort among all parties involved regarding water body assessment methods, use-support decision criteria and whether or not a water body meets or does not meet standards (there is frequently the need to apply some level of best professional judgement)

IV. Options for EQC Assistance and Oversight

Facilitate policy review and development:

- NPS voluntary vs. mandatory
- WQS/site-specific standards
- BMPs/site-specific BMPs
- individual septic systems/subdivision policy
- natural impairment
- threatened definition

Assist with public information

- facilitate public input into process
- disseminate information to legislature and public

Provide liaison with local governments

- cross-jurisdictional issues
- other unique situations

Progress tracking

- report state's progress to legislature and other groups
- make recommendations for funding, program modifications
- gather and disseminate information to assess cumulative program benefits (environmental indicators)
- track and advise on overarching/emerging issues

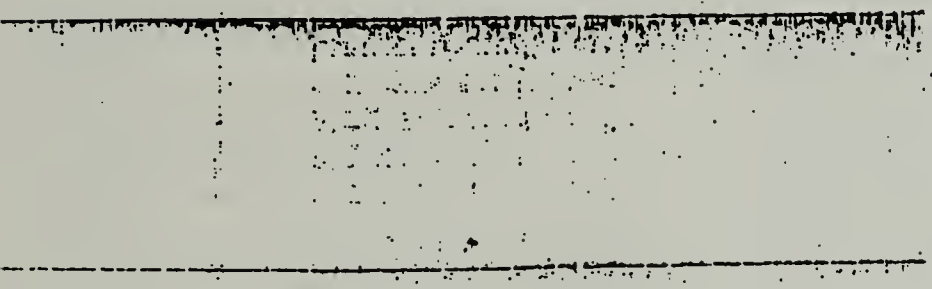
V. Other Issues

<u>TMDL lawsuit status:</u>

- pretrial hearing before Judge Malloy 7/10/97
- schedule set for hearing case
- 7/25 amended complaint due
- 8/7 defendant responses due
- 9/2 defendant briefs due
- 10/15 plaintiff response due
- 11/14 oral arguments to be heard in court

- likely issues not addressed in H.B. 546 include the schedule, NPS policy and waters not yet assessed

VI. Next Steps



APPENDIX K: PERSONS PARTICIPATING IN THE DEVELOPMENT OF POLICY CONSIDERATION WRITEUPS, BY TOPIC

Effluent Trading:
Bob Raisch -- DEQ, Resource Protection Planning Bureau
*Gary Ingman -- DEQ, Data Management and Monitoring Bureau
John North -- DEQ, Chief Legal Counsel
Jan Sensibaugh, DEQ, Permitting and Compliance Division
*Bruce Zander -- EPA, Regional TMDL Coordinator
John Horwich -- Professor, University of Montana Law School
*Ruth Watkins -- Tri-State Implementation Council
John Youngberg -- Montana Farm Bureau/Statewide TMDL Advisory Group
Anne Hedges -- Montana Environmental Information Center
*Don Allen, Western Environmental Trade Association
*Patrick Heffernan, Montana Logging Association
David Gerard, Political Economy Research Center
*Mark Simonich -- DEQ

Definition of Threatened:
Bob Raisch -- DEQ, Resource Protection Planning Bureau
Stuart Lehman -- DEQ, Resource Protection Planning Bureau
*Gary Ingman --DEQ, Data Management and Monitoring Bureau
John North -- DEQ, Chief Legal Counsel
*Bruce Zander -- EPA, Regional TMDL Coordinator
*Chris Levine, DEQ, Data Management and Monitoring Bureau
John Youngberg -- Montana Farm Bureau/Statewide TMDL Advisory Group
*Warren Kellogg -- DNRC, Conservation and Resource Development Division/NRCS
Geoff Smith -- Clark Fork-Pend Oreille Coalition
Anne Hedges -- Montana Environmental Information Center
*Don Allen -- Western Environmental Trade Association
* Mark Simonich -- DEQ

Use Support/Classification:
*Gary Ingman -- Bureau Chief, Monitoring, Assessment and Data Management Bureau
*Randy Apfelbeck -- Water Quality Specialist; Monitoring, Assessment and Data Management Bureau -- DEQ
Cary Hegreberg -- Montana Wood Products Association

Use Support/Classification (cont.):
Larry Peterman -- Fisheries Division Administrator, Fish, Wildlife & Parks
Ken McDonald -- Native Species Coordinator, Fish, Wildlife & Parks
*Abe Horpestad -- Water Standards, DEQ
Geoff Smith -- Clark Fork Coalition/Statewide TMDL Advisory Group
Bruce Zander -- TMDL Coordinator, EPA Region 8
Don Allen -- WETA
Mark Holsten -- Flathead Basin Commission
*Mark Simonich -- DEQ

Sufficient Credible Data:
Randy Apfelbeck -- Monitoring, Assessment & Data Management, DEQ
*Gary Ingman -- Bureau Chief, Monitoring, Assessment & Data Management, DEQ
Bruce Zander -- Regional TMDL Coordinator, U.S. EPA Region 8
Kristy Hoffman -- Volunteer Water Monitoring Coordinator, Montana Watercourse
Jim Stimson -- Volunteer Water Monitoring Grant Administrator, NRIS
Alice Mayio -- Volunteer Monitoring Coordinator, U.S. EPA National Office
*Gene Surber -- Extension Natural Resources Specialist, MSU Extension
Don Allen -- WETA
Mark Holston -- Flathead Basin Commission
*Bob Bukantis -- Monitoring, Assessment & Data Management, DEQ
*Mark Simonich -- Director, DEQ

Septic Issues Raised in the Clark Fork VNRP (Surface Water/Ground Water Interactions):
*Ruth Watkins -- Director, Tri-State Implementation Council
Gary Ingman -- Bureau Chief, Monitoring, Assessment, and Data Management, DEQ
Chris Levine -- 303(d) list coordinator, DEQ
Dennis McKenna -- Program Director, Subdivisions, DEQ
Bonnie Lovelace -- Bureau Chief, Water Protection, DEQ
*Abe Horpestad -- Water Quality Standards, DEQ
Jim Carlson -- Director of Environmental Health, Missoula County
Jim Roark -- Director of Env. Health, Gallatin County

Septic Issues Raised in the Clark Fork VNRP (Surface Water/Ground Water Interactions) (cont.):
Vivian Drake -- Lewis and Clark Water Quality Protection District
*Andy Skinner -- Developer
Gordon Morris -- Montana Association of Counties
Rick Hartz -- President Elect, Montana Association of Planners
Gavin Anderson -- Montana Department of Commerce
Emily Swanson -- State Representative
Michael Vogel -- Director, Pollution Prevention Program, MSU Extension
Mark Holston -- Flathead Basin Commission
Larry Mitchell/Mary Vandenbosch -- Staff, EQC Growth Issues Subcommittee
*Claudia Massman -- Legal Staff, DEQ
*Mark Simonich -- Director, DEQ
Claudia Massman -- Legal Staff, DEQ
Dorothy Bradley/Three Forks Meeting Participants (Gretchen/Steve)

Water Quantity Relationships:
Gary Ingman -- Monitoring, Assessment, and Data Management Bureau Chief, DEQ
*Jack Stultz -- DNRC
Stuart Lehman -- TMDL Coordinator, DEQ
*John Bloomquist -- Montana Stockgrowers Association/Statewide TMDL Advisory Group
Don MacIntyre -- Chief Counsel, DNRC
Bruce Zander -- TMDL Coordinator, U.S. EPA
A.B. Adams -- EQC Intern
*Carole Mackin -- Outreach Coordinator, Lower Missouri Basin; DEQ
*Mark Simonich -- Director, DEQ

Best Management Practices (BMPs):
John North -- Chief Legal Counsel, DEQ
Todd Everts -- Attorney, EQC
*Greg Petesch -- Code Commissioner, Montana Legislature
A.B. Adams -- EQC Intern
Stuart Lehman -- NPS/TMDL Program Manager, DEQ
*Abe Horpestad -- DEQ
Gary Ingman -- Bureau Chief, Monitoring, Assessment, and Data Management, DEQ
*John Bloomquist -- Montana Stockgrowers/Statewide TMDL Advisory Group
Mike Murphy -- Montana Water Resources Association
*Mike Volesky -- Montana Association of Conservation Districts
Steve Schmitz -- Conservation Districts Bureau Chief, DNRC
Warren Kellogg -- Grazing Practices Work Group/DNRC
*Alan Rollo -- Watershed Coordinator, Sun/Muddy/Teton
Don Allen -- WETA
Bud Clinch -- Director, DNRC
*Tom Pick -- DEQ/NRCS

Best Management Practices (BMPs) (cont.):
Rich Moy -- DNRC
*Roxann Lincoln -- West Slope TMDL Outreach Coordinator, DEQ
Bruce Zander -- TMDL Coordinator, U.S. EPA Region 8
Jeff Barber -- Northern Plains Resource Council
Mary Ellen Wolfe -- Water Resources Educator, Montana Watercourse
Pat Crowley -- DEQ
Pete Strazdas -- DEQ
*Nick Bugosh -- DEQ
John Cobb -- Representative, Montana Legislature
Mark Holston -- Flathead Basin Commission (for distribution to agricultural representative)
*Gene Surber -- MSU Extension
*Mark Simonich -- Director, DEQ
Ruth Watkins -- Tri-State Implementation Council

Interagency Coordination:
Julie Lapeyre -- Policy Advisor, Office of the Governor
Bob Raisch -- DEQ, Resource Protection Planning Bureau
Gary Ingman -- DEQ, Data Management and Monitoring Bureau
Bruce Zander -- EPA, Regional TMDL Coordinator
Clayton Creager -- Tetra Tech
*Montana Watershed Coordination Council, Watershed Linking Work Group
Dick Blodnick -- EPA
Dorothy Bradley -- Montana university System Water Center
*Mike McClane -- DNRC
Gerald Mueller -- Consensus Associates
*Mike Volesky -- Montana Association of Conservation Districts
Rich Moy -- DNRC
*Warren Kellogg -- DNRC/NRCS
*Ken McDonald -- Endangered Species Coordinator, FWP
*Allen Rollo -- Chair, Montana Watershed Coordination Council
Randy Smith -- Big Hole Watershed Committee
Mark Holston -- Flathead Basin Committee
Roxa French -- Bitterroot Water Forum
Mary Ellen Wolfe -- Montana Watercourse
Gary Giem -- Ruby Valley Conservation District
Art Christiansen -- Beaverhead Conservation District
Laurel Holsman -- Montana Watersheds (wrong title...)
*Mark Simonich -- Director, DEQ

Interaction with Tribes/Other States:
*Stuart Lehman -- DEQ, Resource Protection Planning Bureau
*Bob Raisch -- DEQ, Resource Protection Planning Bureau
*John North -- DEQ, Chief Legal Counsel
*Bruce Zander -- EPA, Regional TMDL Coordinator

Interaction with Tribes/Other States (cont.):
John Youngberg -- Montana Farm Bureau/Statewide TMDL Advisory Group
Wyman McDonald -- Coordinator, Governor's Office of Indian Affairs
*Mark Holston -- Flathead Basin Commission
Harley Harris -- Assistant Attorney General, Montana
Clay Smith -- Solicitor, Montana Attorney General's Office
Susan Cottingham/*Barb Cosins -- Staff, Reserved Water Rights Compact Commission
Professor John Horwich, University of Montana School of Law
Rep. George Heavy Runner
Eddye McClure, Legislative Attorney
Michael E. Webster -- Crowley, Haughey, Hanson, Toole & Dietrich
Don MacIntyre -- Chief Counsel, DNRC
*Don Allen -- Western Environmental Trade Association

Implications of the Lawsuit:
*Bruce Zander -- TMDL Coordinator, EPA Region 8
John North -- Chief Counsel, DEQ
John Youngberg -- Chair, Statewide TMDL Advisory Group/Montana Farm Bureau
*John Bloomquist -- Statewide TMDL Advisory Group/Montana Stockgrowers
John Horwich -- School of Law, University of Montana
Mark Holston -- Governor's Office/Flathead Basin Commission
A.B. Adams -- EQC Intern
Don Allen -- WETA

Local Involvement vs. Mandatory Timeframe:
Stuart Lehman -- TMDL Coordinator, DEQ
*Bruce Zander -- TMDL Coordinator, U.S. EPA Region 8
*Mike Volesky -- Montana Association of Conservation Districts
Steve Schmitz -- Conservation Districts Bureau Chief, DNRC
Mike McLane -- Watershed Planner, DNRC
Clayton Creager -- Tetra Tech
Mark Holston -- Governor's Office/Flathead Basin Commission
*Gerald Mueller -- Consensus Associates
*Nedra Chandler -- Montana Consensus Council
Pat Hettinger -- Lewis and Clark County Water Quality Conservation District
Laurel Holsman -- Natural Resources Program Management
Larry VanRinsum -- Executive Director, Montana Watershed Inc. (from Mark Holston)
*Alan Rollo -- watershed consultant/Chair, Montana Watershed Coordination Council
Watershed Symposium attendees expressing interest in local roles
Warren Kellogg -- DNRC

Local Involvement vs. Mandatory Timeframe (cont.):
Don Allen -- WETA
*Mark Simonich -- Director, DEQ

Funding, Its Use, and the Role of 319 Funds in Program Implementation:
Bob Raisch -- Chief, Resource Protection Planning Bureau, DEQ
*Ann Danzer -- Budget Specialist, DEQ
*Roger Lloyd -- Associate Fiscal Analyst, Legislative Fiscal Division
*Mike Volesky -- Montana Association of Conservation Districts
*Mark Simonich -- Director, DEQ
*Stuart Lehman -- DEQ

Local Funding for HB546 Implementation:
*Mike Volesky -- Montana Association of Conservation Districts
*Gerald Mueller -- Consensus Associates
Warren Kellogg -- DNRC/NRCS
*Steve Schmitz -- Bureau Chief, Conservation Districts Bureau, DNRC
*Alan Rollo -- Watershed Consultant/Chair, Montana Watershed Coordination Council
Gary Ingman -- Bureau Chief, Monitoring, Assessment, and Data Management, DEQ
*Roger Lloyd -- Associate Fiscal Analyst, Legislative Fiscal Division
Bob Raisch -- DEQ
Krista Lee-Campbell -- Public Education Specialist, DNRC
*Mark Simonich -- Director, DEQ

*Denotes persons from whom comments were received and incorporated. Persons not so denoted received copies of draft policy consideration writeups, but did not provide comments.

APPENDIX L: NATIONAL OVERVIEW OF TMDL LITIGATION

The following describes the status of court cases across the U.S. related to state or regional progress on 303(d) list, and TMDL, development. Information provided is current as of August 1998.

I. TMDL CASES WITH COURT DECISIONS OR CONSENT DECREES

(listed in chronological order based on date of court decision or consent decree)

Location/Case/Decision or Decree Date	Complaint	Facts	Result
Lake Michigan National Wildlife Federation v. Adamkus (1991)	Plaintiffs contended insufficient TMDL development by states bordering Lake Michigan constituted constructive submission of no TMDLs.	Wisconsin had identified four areas of Lake Michigan for TMDL development. EPA approved state determinations in 1985.	Court rejected plaintiff's contention because actual submissions for TMDL development had been made by Wisconsin and approved by EPA.
Alaska Alaska Center for the Environment v. Reilly (1991)	Constructive submission of no TMDLs.	All parties agreed that no TMDL had ever been submitted to EPA for Alaska. The court also found that Alaska had not completed "even the first stage of the TMDL process."	Alaska had constructively submitted no TMDLs. Court ordered EPA identify § 303(d) list water segments and initiate process of establishing TMDLs for Alaska.
Minnesota Sierra Club v. Browner (1993)	Constructive submission of no TMDLs and therefore, EPA had a mandatory duty to establish a list of water quality-limited segments and accompanying TMDLs for Minnesota waters.	Minnesota had submitted several lists of waters to EPA, although EPA disapproved these lists and established its own list. State was currently working on TMDLs for six § 303(d) list water segments with schedules ranging from 1 year to 9 years for completion	State's activities precluded finding of constructive submission

Location/Case/Decision or Decree Date	Complaint	Facts	Result
Columbia River Dioxin/Organochlorine Center v. Rasmussen (1995)	TMDL for dioxin established by EPA for the Columbia River was unreasonable and inadequate	unknown	Court upheld the TMDL
Idaho Idaho Sportsmen's Coalition v. Browner (1996)	1) EPA's approval of Idaho's § 303(d) list was arbitrary and capricious. 2) Idaho had constructively submitted no TMDLs.	1) unknown 2) Idaho had submitted two TMDLs and was developing 29 TMDLs and other pollution control strategies.	1) Court found that Idaho's § 303 (d) list improperly omitted waters identified in the State's 1992 § 305(b) report and failed to consider information available from the U.S. Forest Service. Court ordered EPA to establish a § 303(d) list for Idaho. 2) State's activities precluded constructive submission, but EPA had violated a "duty" and acted arbitrarily and capriciously by not establishing a reasonable schedule with Idaho for TMDL development. EPA and Idaho then agreed on an 8-year schedule.
Georgia Sierra Club v. Hankinson (1996)	Constructive submission of no TMDLs	Georgia had made "some TMDL submissions", although the court found them "totally inadequate".	Constructive submission precluded, but EPA's failure to disapprove Georgia's inadequate TMDL submissions was arbitrary and capricious and a violation of the Administrative Procedures Act. Eventually, the parties signed a consent decree that set out a schedule for Georgia to establish TMDLs in each of its watershed basins within 1 year to 8 years. EPA would establish TMDLs if Georgia did not meet the schedule deadlines. EPA would also regularly review Georgia's continuing planning process and TMDL program.
California (North Coast) Pacific Coast Federation of Fishermen's Associations v. Marcus	unknown	unknown	Plaintiffs and EPA signed a consent decree that sets out an 11-year schedule for California to establish TMDLs for 17 rivers along the north coast. EPA will establish TMDLs if California does not meet schedule deadlines.
Pennsylvania American Littoral Society v. EPA (1996)	unknown	unknown	Consent decree sets out a 12-year schedule for establishment of TMDLs for all waters on Pennsylvania's 1996 § 303(d) list (approximately 575 waters). EPA will establish TMDLs if Pennsylvania does not meet schedule deadlines. EPA will also develop regional guidance on § 303(d) listing and review Pennsylvania's continuing planning process.

Location/Case/Decision or Decree Date	Complaint	Facts	Result
Arizona Defenders of Wildlife v. Browner (1996)	unknown	unknown	Consent decree requires establishment of TMDLs for mercury on 11 § 303(d) list waters in four and one-half years. EPA will establish TMDLs if Arizona does not meet schedule deadlines.
New Mexico Forest Guardians v. Browner (1996)	unknown	unknown	Consent decree sets out a 10-year schedule for establishment of TMDLs for 61 specified waters on New Mexico's 1996 § 303(d) list. TMDLs must be established for remaining waters on the 1996 list within 20 years. EPA will establish TMDLs if New Mexico does not meet schedule deadlines.
West Virginia Ohio Valley Environmental Coalition, Inc. v. Browner (1995)	unknown	unknown	Consent decree sets out a 10-year schedule for establishment of TMDLs for over 500 specified § 303(d) list waters. EPA will establish TMDLs if West Virginia does not meet the schedule deadlines.
Delaware American Littoral Society v. EPA (1994)	unknown	unknown	Consent decree sets up a 10-year schedule for establishment of TMDLs for all waters on Delaware's 1996 § 303(d) list. EPA will establish TMDLs if Delaware does not meet schedule deadlines. EPA will also evaluate and make recommendations regarding Delaware's monitoring and assessment program for TMDLs, and will review Delaware's continuing planning process.
California (Newport Bay) Defend the Bay, Inc. v. Marcus (1996)	unknown	unknown	Consent decree sets out a 4-year schedule for establishment of TMDLs for specified pollutants and waters in Newport Bay, California. EPA will establish TMDLs if California fails to meet schedule deadlines.
Washington Northwest Environmental Advocates v. Browner (1991)	unknown	unknown	Consent decree sets out a 5-year schedule for establishment of 38 TMDLs. EPA will establish TMDLs if Washington fails to meet schedule deadlines. Parties also signed a settlement agreement which sets out a 15-year schedule for establishing TMDLs for all waters Washington's 1996 § 303(d) list. EPA will establish TMDLs if Washington does not meet the schedule deadlines.

II. PENDING TMDL LITIGATION

(listed in chronological order based on filing date)

Location/Case/Decision or Decree Date	Relief Sought
Kansas Kansas Natural Resources Council, Inc. v. Browner (1995)	The suit seeks a court order directing EPA to disapprove Kansas' § 303(d) list and to establish lists and TMDLs for Kansas. The suit also seeks a court order directing EPA to withdraw its approval of Kansas' NPDES permit program and stop all Kansas NPDES permitting until EPA has approved an adequate continuing planning process for Kansas.
New Jersey American Littoral Society v. EPA (1996)	The suit seeks a court order directing EPA to disapprove New Jersey's TMDL list and continuing planning process. The suit also seeks a court order directing EPA to establish a TMDL list and TMDLs and to withdraw New Jersey's NPDES authorization if the state fails to adopt an acceptable continuing planning process
Louisiana Sierra Club v. Saginaw (1996)	The suit seeks a court order directing EPA to establish a § 303(d) list for the state, establish TMDLs for all waters on the list, and establish a schedule for TMDL submissions.
Oregon Northwest Environmental Advocates v. Browner (1996)	The suit alleges that EPA's approval of Oregon's 1994-96 § 303(d) list was arbitrary and capricious and that EPA failed to approve or disapprove TMDLs submitted by Oregon within 30 days. The suit seeks a court order directing EPA to establish a TMDL schedule for Oregon. The suit also seeks a court order requiring EPA to disapprove Oregon's continuing planning process and NPDES program.
Wyoming Wyoming Outdoor Council v. Browner (1996)	The suit alleges EPA's approval of Wyoming's 1992 and 1994 § 303(d) lists was arbitrary and capricious, and that EPA has failed to approve or disapprove of Wyoming's 1996 list. The suit seeks a court order directing EPA to establish a §303(d) list for Wyoming and to establish TMDLs for all waters on that list.
North Carolina The Neuse River Foundation, Inc. v. Browner (1996)	The suit seeks a court order directing EPA to establish TMDLs for the Neuse River within 60 days and to establish TMDLs for all other § 303(d) list waters within 5 years. The suit also seeks a court order directing EPA to "implement and enforce" all TMDLs.
Montana Friends of the Wild Swan, Inc. v. Browner (1997)	The suit seeks a court order directing EPA to establish TMDLs for all § 303(d) waters in Montana within 3 years and to implement a monitoring program to comply with the CWA.
Alabama Mudd v. Hankinson (1997)	The suit seeks a court order directing EPA to establish a TMDL schedule and develop TMDLs for all §303(d) list waters in Alabama.
Colorado Colorado Environmental Coalition v. EPA (1997)	The suit alleges that Colorado's failure to establish TMDLs for all § 303(d) list waters amounts to constructive submission of no TMDLs. In addition, it alleges EPA's approval of TMDLs in Colorado was arbitrary and capricious and seeks a court order requiring EPA to establish TMDLs for all §303 (d) list waters in Colorado.

Location/Case/Decision or Decree Date	Relief Sought
Maryland Sierra Club v. EPA (1997)	The suit seeks a court order vacating EPA's approval of Maryland's 1996 §303(d) list and requiring EPA to establish a §303(d) list for Maryland. The suit also seeks a court order directing EPA to establish TMDLs for all §303(d) waters in Maryland.
Oklahoma Hayes v. Browner (1997)	The suit seeks a court order directing EPA to establish TMDLs for all §303(d) list waters in Oklahoma by December 1999.
Mississippi Sierra Club v. Hankinson (1997)	The suit seeks a court order directing EPA to establish TMDLs for all §303(d) list waters in Mississippi.
District of Columbia Kingman Park Civic Association v. U.S. Environmental Protection Agency (1998)	The suit seeks a court order vacating EPA's approval of the District of Columbia's 1996 §303(d) list and requiring EPA to establish a §303(d) list for the District of Columbia. Court order directing EPA to establish and implement TMDLs for all §303 (d) list waters in the District of Columbia and to monitor all unmonitored waters in the District. The suit also seeks a court order requiring EPA to report its progress to the plaintiffs and the court.

III. STATES WITH NOTICES OF INTENT TO FILE CITIZEN SUITS

Alabama
Florida
California (Los Angeles region)
Virginia
South Dakota

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